THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

Telegrams—LANCET, WESTRAND LONDON *Telephones*—GERRARD 4314 & 4315 *Offices*—423, Strand, London, W.C.2

No. XX. OF VOL. II., 1921. **LONDON, SATURDAY, NOVEMBER 12, 1921.** **Pp. 112—Price 1s.**

No. 5124. Vol. CCI. Founded 1823. Registered as a Newspaper. Published Weekly. Annual Subscription Inland £2 2s. Abroad £2 10s.

By H. J. WARING, M.S., M.B., B.Sc.Lond., F.R.C.S., Surgeon to, and Joint Lecturer in Surgery at, St. Bartholomew's Hospital; Consulting Surgeon to the Metropolitan Hospital; Member of Court of Examiners, Royal College of Surgeons; late Examiner in Surgery, University of London.

New Edition Shortly. 8vo, extra cloth. Pp. xvi.-385, with 58 Engravings. Price 12s. 6d. net.

SURGICAL DISEASES OF THE GALL-BLADDER, BILE DUCTS, AND LIVER.

THEIR PATHOLOGY, DIAGNOSIS, AND TREATMENT.

(Including Jacksonian Prize Essay.)

Henry Frowde & Hodder & Stoughton, The *Lancet* Building, 1 & 2, Bedford-street, London, W.C. 2.

SECOND EDITION. 20s. net.

BY HERBERT J. PATERSON, M.C., M.B.(Cantab.), F.R.C.S.

THE SURGERY OF THE STOMACH:

A Handbook of Diagnosis and Treatment.

"A masterpiece among monographs."—THE PRACTITIONER.

James Nisbet & Co., London, W.

Just Published. Price 9s. net.

A GUIDE TO URINARY DISEASES By A. ABRAHAMS, M.D., M.R.C.P., and A. CLIFFORD MORSON, F.R.C.S.

London: Edward Arnold & Co.

Price 10s. 6d. SECOND EDITION of CECIL WEBB-JOHNSON'S

TWILIGHT SLEEP

Foreword by COMYNS BERKELEY, M.C., M.D., F.R.C.P.

Including all the Latest Work on the Subject.

Butterworth & Co., Bell Yard, Temple Bar, London, W.C. 2.

BY P. LOCKHART MUMMERY, F.R.C.S.

DISEASES OF THE COLON AND THEIR SURGICAL TREATMENT,

AND

DISEASES OF THE RECTUM AND ANUS.

Baillière, Tindall & Cox, 8, Henrietta Street, Covent Garden.

BY H. WANSEY BAYLY, M.C., Hon. Sec., Society for the Prevention of Venereal Disease; late Pathologist to the London Lock Hospitals; Medical Officer in Charge Venereal Department, St. George's Hospital, &c.

VENEREAL DISEASE:

ITS PREVENTION, SYMPTOMS, AND TREATMENT.

54 Illustrations. Price 10s. 6d. J. & A. Churchill, London.

THE LANCET:—"A crisp and well-arranged summary."

MEDICAL OFFICER:—"The busy practitioner will find it invaluable."

PUBLIC HEALTH:—"Original and uncommonly good."

NEW AND STANDARD BOOKS

Published by

H. K. LEWIS & CO. LTD.

See Advertisement Page 30.

London: H. K. Lewis & Co. Ltd., 136, Gower Street, W.C. 1.

With 53 Illustrations, 22 in Colour on 14 Plates, and 31 in Black-and-White on 28 Plates. Royal 8vo. 36s. net; postage 1s. 3d.

SYPHILIS AND ITS TREATMENT. With ESPECIAL REFERENCE TO SYPHILIS OF THE SKIN. By WILFRID S. FOX, M.A., M.D., B.C. Cantab., M.R.C.P. Lond., Physician for Diseases of the Skin, Lecturer on Dermatology, and Physician in Charge of the Venereal Department at St. George's Hospital, &c.

"..... very readable ..... we can strongly recommend it to our readers."—JOURNAL R.N. MEDICAL SERVICE.

"..... it is valuable and full of useful hints."—MEDICAL OFFICER.

H. K. Lewis & Co. Ltd., 136 Gower-street, London, W.C. 1.

Now Ready. Second Edition. Crown 8vo. 5s. net; postage 4d.

GONORRHŒA: Its Systematic Treatment. By NORMAN LUMB, O.B.E., M.B., B.S. Lond.

"It is clearly written, concise, and in many ways a serviceable work."—THE LANCET.

H. K. Lewis & Co. Ltd., 136 Gower-street, London, W.C. 1.

BY W. SOLTAU FENWICK, M.D.

CANCER OF THE STOMACH.

362 pages. 10s. 6d.

ULCER OF THE STOMACH AND DUODENUM.

392 pages. 10s. 6d.

J. & A. Churchill, 7, Great Marlborough-street, London, W. 1.

DYSPEPSIA: Its Varieties and Treatment.

Octavo, 455 pages. 13s. net.

JUST PUBLISHED. THIRD AND ENLARGED EDITION.

HYPNOTISM AND TREATMENT BY SUGGESTION.

By ALBERT E. DAVIS, F.R.C.S. Ed., L.R.C.P., Hon. Physician to the Liverpool Psycho-Therapeutic Clinic.

"A fascinating book."—THE DAILY NEWS.

Of all Booksellers. Price 5s. net.

Simpkin, Marshall & Co., Ltd., London.

STERILITY IN WOMEN. By ARTHUR E. GILES, M.D., B.Sc., Ch.B., F.R.C.S., M.R.C.P., Senior Surgeon to the Chelsea Hospital for Women, Gynæcologist to the Prince of Wales's General Hospital, Tottenham.

Demy 8vo. Cloth. 243 pages, Illustrated. Price 10s. net.

"For the General Practitioner this is an ideal book, full of information."—MEDICAL WORLD.

"The best that has been written on the subject."—BRIT. MED. JR.

Henry Frowde, Hodder & Stoughton, 1 & 2, Bedford-st., London, W.C.2

BY THE SAME AUTHOR.

DISEASES OF WOMEN (with SIR JOHN BLAND-SUTTON). 7th Ed. William Heinemann.

GYNÆCOLOGICAL DIAGNOSIS } Baillière,
AFTER RESULTS OF ABDOMINAL OPERATIONS } Tindall & Cox

Just Issued. **OSBORNE'S THERAPEUTICS.** Just Issued.

Dr. Osborne has developed his subject in a most logical way, giving first fundamentals and then building up to their actual therapeutic application. This applies not only to drug therapy, but equally to glandular therapy, physiotherapy, dietotherapy, vaccines, and serums, &c. Endocrinology is presented in a monograph of 115 pages—a monograph not of theory, but of practice. Even anæsthesia is considered, because Dr. Osborne realises the practitioner is frequently called upon to prepare the patient for the operation and to care for him after the operation. So every form of anæsthesia—local and general—is considered, as well as pre- and post-operative care. The book includes materia medica, prescription writing, and toxicology. It is a book for constant use.

"Professor Osborne ..... takes up the subject in a sensible way for the enlightenment of the young physician starting in practice, and to such the book ought to prove very valuable."—THE PRESCRIBER.

By OLIVER T. OSBORNE, M.D., Professor of Therapeutics, Department of Medicine, Yale University. Octavo of 880 pages. Cloth, 35s. net.

W. B. SAUNDERS COMPANY, Ltd., 9, Henrietta St., Strand, London, W.C. 2.

USE LESLIES' ZŌPLA (ZINC OXIDE PLASTER)

A PERFECT STRAPPING

ZŌPLA is tenaciously Self-adhesive, will not slip, will stand any strain imposed on it, is Antiseptic, and is abso utely Non-irritating. The Sale is steadily growing. British Made.

Supplied on White and Flesh-colour Cloths, also on Holland, on Spools ½" to 4", 5 or 10 yard lengths, in rolls 7" and 12" wide. Also on moleskin, chamois leather, felts, and waterproof cloth. **SAMPLES ON REQUEST.**

ZŌPLA is made by the firm with the reputation for BROWN HOLLAND STRAPPING (Original make).

Telephone—Walthamstow 686

LESLIES LTD., High Street, Walthamstow, LONDON, E.17

GOLD MEDAL, INTERNATIONAL CONGRESS OF MEDICINE, LONDON, 1913.

"MIST. PEPSINÆ CO. c. BISMUTHO"

(HEWLETT'S).

COMPOSITION.—Pepsin, Bismuth, Sol. Opii Purif., Hydrocyanic Acid (B.P.), Tinct. Nux Vomica, &c.

An elegant preparation, miscible with water, invaluable in Gastric Catarrh, Pyrosis, Carcinoma, and all Forms of Atonic and Irritative Dyspepsia.

DOSE: Half to One Fluid Drachm Diluted.

Packed, for dispensing only, in 10, 22, 40, and 90-oz. Bottles.

Price in England, 12/6 per lb.

Physicians will please write "Mist. Pepsinæ Comp. (Hewlett's)."

INTRODUCED AND PREPARED ONLY BY

C. J. HEWLETT & SON, LTD., Wholesale & Export Druggists,

35 to 42, CHARLOTTE STREET, LONDON, E.C.

VALENTINE'S
PREPARATION
NUTRIO PRIME
MEAT JUICE.
The result of an original Process of Preparing Meat, and extracting its Juice, by which the elements of nutrition are obtained in a state ready for immediate absorption.
DIRECTIONS-Dissolve one teaspoonful of the Preparation in one or three tablespoonfuls of cold or warm water. The use of boiling water changes the character of the preparation.

Valentine's Meat-Juice

In **Typhoid, Gastric** and **Other Fevers** when the **Digestive Organs** are **Impaired** and it is **Imperative** to **Sustain** the **Patient, Valentine's Meat-Juice** demonstrates its **Ease** of **Assimilation** and **Power** of **Restoring** and **Strengthening.**

J. R. Wood, M. D., *Physician Sheltering Arms Hospital, Paint Creek, W. Va., U. S. A.:* "I have been using VALENTINE'S MEAT-JUICE in the treatment of Typhoid Fever cases in the Sheltering Arms Hospital, for the last two or three weeks, with the most gratifying results both to the patient and physician. I consider it the best preparation of animal food I have ever seen, in fact, the only one I have ever had any success with."

C. R. Trippe, M. D., *Easton, Maryland, U. S. A.:* "The VALENTINE'S MEAT-JUICE came at a very opportune time, for shortly after I received a very severe accident to my knee from which I had Traumatic Fever for three weeks and could eat nothing, not even milk. I had often prescribed it, but had no idea of its real merit until I used it myself. I lived upon it for at least a week and not only found it very nourishing but very pleasant to take, in fact, was anxious for the time to come to take it."

For Sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,

D 195 **RICHMOND, VIRGINIA, U. S. A.**

THE LANCET.

No. 5124. LONDON, SATURDAY, NOVEMBER 12, 1921. Vol. CCI.

CONTENTS.

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

PRESIDENTIAL ADDRESS
on the Medical Aspects of Some Urinary Diseases. Delivered before the Section of Urology of the Royal Society of Medicine. By Sir THOMAS HORDER, M.D. 989

ORIGINAL ARTICLES.
Observations on Postural Proteinuria. By G. A. HARRISON, B.A., M.B., B.Ch. 991
The Essential Causes of Adenoids and their Association with Rickets. By H. MERRALL, M.B., Ch.B. 994
Unhealthy Tonsils and Cervical Adenitis. By WALTER G. HOWARTH, M.A., M.B., F.R.C.S., and S. ROODHOUSE GLOYNE, M.D., D.P.H. 997
A Study of Dysentery in the Field. With Special Reference to the Cytology of Bacillary Dysentery and its Bearing on Early and Accurate Diagnosis. By JOHN ANDERSON, M.A., B.Sc., M.D., Ch.B. — (*Illustrated*) 998
An Unusual Case of Injury to the Petrous Bone. By H. LAWSON WHALE, M.D., F.R.C.S. 1002
Modern Footwear as a Cause of Fatigue, Muscular Rheumatism, and Flat-foot. With Notes on an Improved Type of Boot. By S. D. FAIRWEATHER, M.B., Ch.B. — (*Illustrated*) 1019

MEDICAL SOCIETIES.
Royal Society of Medicine: Section of Obstetrics and Gynæcology: Exhibition of Cases and Specimens.—Glycosuria in Pregnancy 1003
Section of Medicine: Epigastric Pain 1005
Liverpool Medical Institution 1005
Devon and Exeter Medico-Chirurgical Society 1005

NEW INVENTIONS.
A New Stethoscope (Wm. C. Minchin, M.D., B.Ch., B.A.O.)—(*Illustrated*) .. 1010

REVIEWS AND NOTICES OF BOOKS.
Health of the Industrial Worker. By Edgar L. Collis, M.D., and Major Greenwood, M.R.C.P... 1006
Principles of Immunology. By Howard T. Karsner, M.D., and Enrique E. Ecker, Ph.D. 1006
Practical Medical Dictionary. By Thomas Lathrop Stedman, A.M., M.D. 1007
Électrologie. By Louis Delherm 1007
The Sahara. By Pierre Loti 1008
Rôle des Colloïdes chez les Êtres Vivants. By Auguste Lumière..... 1008
Burdett's Hospitals and Charities, 1921..... 1008
Grundriss der Augenheilkunde. Second edition. By Dr. C. H. May and Dr. E. H. Oppenheimer 1008
Quarterly Journal of Medicine 1008
Journal of Industrial Hygiene 1009
Bio-chemical Journal 1010

LEADING ARTICLES.
RURAL MEDICAL SERVICE IN U.S.A. 1011
THE HEALTH OF THE SCHOOL CHILDREN 1011
DEFECTIVE DIET AS A CAUSE OF STERILITY .. 1012
THE SCOPE OF UROLOGY 1013

ANNOTATIONS.
Notified Infectious Disease in 1920 1014
Street Trading in London 1014
Sclerosing Non-Suppurative Osteo-Myelitis.... 1014
Qualification and Competency 1015
Living Sutures in Operative Surgery 1015
Voluntary Hospitals Commission: Emergency Grants to London Hospitals 1015
A Portable Disinfector.. 1016
A Case of Death After Vaccination 1016
Reflex Mechanism of Lumbago and Sciatica..... 1016
Life Insurance in the Tropics 1017
Motor Exhaust Gas in Confined Spaces 1017
Intravenous Copper in Tubercle 1018
Rudolf Virchow 1018
Stillbirth, its Prevention.. 1018
Brussels Medical Degree.. 1019

SPECIAL ARTICLES.
Medicine and the Law: The Legal Aspects of the Case of Harold Jones 1022
Paris: Medical Inspection of Schools 1023
International Labour Conference at Geneva..... 1029

CORRESPONDENCE.
The Educational Treatment of Residual Hearing in Deaf Children (Mr. A. J. Story, Mr. J. S. Fraser) 1024
Trypanocide (Dr. E. T. Jensen) 1025
Belladonna Poisoning: An Overdose of Atropine (Dr. H. Neville Taylor) 1026
Occipito-Posterior Presentations (Dr. Robert Watson) 1026
British Spa Federation (Mr. F. J. C. Broome).. 1027
The Uses of Dog (Cynotherapy) (Dr. W. J. Rutherfurd, Dr. S. C. Zavitzianos)..... 1038

OBITUARY.
John Wickham Legg, F.R.C.P., M.D., F.S.A. 1027
Andrew Alexander Brockatt, M.D., M.R.C.S. 1027
Edgar Beaumont, M.D... 1028
David Drybrough Gold, M.D. 1028

THE SERVICES.
Royal Naval Medical Service.—Army Medical Service.—Royal Army Medical Corps.—Royal Air Force.—Deaths in the Services..... 1028

PUBLIC HEALTH SERVICES.
Scarlet Fever and Diphtheria in London..... 1030

PARLIAMENTARY INTELLIGENCE.
Notes on Current Topics: Mental Treatment of Ex-Service Men..... 1030
House of Commons: National Health Insurance Bill.—Supply of Milk for Mothers and Children.—Approved Societies and Medical Benefit.—Testing of Clinical Thermometers.—Small-pox in Glasgow.—Soldiers and Venereal Disease. — Medical Stores for Russia..... 1030

MEDICAL NEWS.
Royal Colleges of Physicians of London and Surgeons of England: Pass-list 1032
South-Western Polytechnic Institute 1002
National Health Insurance: Government of Ireland Act 1013
People's League of Health 1027
Memorial to Lieut.-Col. E. F. Harrison..... 1027
Royal College of Surgeons of England 1032
University of Edinburgh. 1033
University of Bristol..... 1033
Payments by Hospital Patients in Bristol 1033
Phyllis Siepmann Memorial Prize 1033
Diphtheria in Bristol.... 1033
Royal Medical Benevolent Fund Guild 1033
Poor-Law Reform in Ireland 1033
Society of M.O.H.'s: Tuberculosis Midland Sub-Group 1034
Malthusian League..... 1034
Ladies Medical Golfing Society 1034
Chelsea Clinical Society.. 1034
Ulster Medical Society... 1034
Literary Intelligence.... 1034
Auxiliary Royal Army Medical Corps Funds .. 1034
West Kent Medico-Chirurgical Society 1034
Dublin University Biological Association 1034
Safeguarding of Industries Act 1034
National Provident Scheme 1034
Honour to a Medical Man 1034
The late Dr. R. P. Woodroofe 1034
N.C.C.V.D. Scottish Committee 1034
Harrogate Medical Society 1034

NOTES, SHORT COMMENTS, &c.
Gastric Response to Foods 1037
Baby Management 1037
A Register of Masseuses and Masseurs..... 1037
Food Value of White Flour 1037
Seven at a Birth..... 1037
The Distribution of Mosquitoes in England.... 1037
"La France" 1038
Canine Distemper..... 1038
Fraudulent "Cures".... 1038
Public Health in Nyasaland 1038

Medical Diary 1035
Appointments 1036
Vacancies 1036
Births, Marriages, Deaths 1036

JUST READY.

THE INTESTINAL PROTOZOA OF MAN.

By **CLIFFORD DOBELL**, M.A., F.R.S., and **F. W. O'CONNOR**, M.R.C.S., L.R.C.P., D.T.M. & H.

Published for the Medical Research Council.

Royal 8vo. With 8 Plates. 15s. net, postage 1s.

"The book should be read by every student of this highly specialised subject. It is the only up-to-date account of the human Intestinal Protozoa which exists, and the authors are to be congratulated on having presented to the scientific world such an excellent treatise."—THE LANCET.

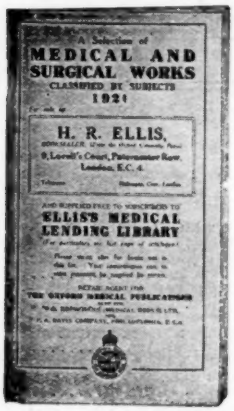
ESSENTIALS OF TROPICAL MEDICINE.

By **W. E. MASTERS**, M.D., M.R.C.S., L.R.C.P., Medical Officer, Gold Coast.

With 9 Full-page Coloured Plates and about 400 Illustrations in the Text. Royal 8vo. £2 2s. net, postage inland 1s. 3d.

"The book is excellent ..... We can confidently recommend it to anyone desirous of obtaining a concise, practical, and up-to-date account of Tropical Medicine."—MEDICAL TIMES.

JOHN BALE, SONS & DANIELSSON, LTD., 83-91, Great Titchfield Street, London, W. 1.



THE ELECTRON IS THE UNREST OF ENERGY.

FOR INTELLIGENT SERVICE GO TO

ELLIS'S MEDICAL LIBRARY

Telephone City 8281.

Telegrams: "Nuboogue, Cent, London."

Another satisfied Subscriber writes:—

"I notice that you ask for suggestions from subscribers which might increase the efficiency of the service you offer. Personally I have nothing to suggest and cannot imagine that your mail bag ever contains many such suggestions. To my mind *yours is the ideal Medical Lending Library*, and not the least of its many good points the fact that the subscription is out of all proportion to the advantages offered. At every opportunity I can recommend it whole-heartedly to my friends."

Send all Orders and Library Requisitions to

H. R. ELLIS, Medical Bookselling Specialist,
9, LOVELL'S COURT, PATERNOSTER ROW, LONDON, E.C. 4.
This Useful List Sent Free. (100 yards from St. Paul's Cathedral.)

NOW READY. FOURTH EDITION

HYGIENE & PUBLIC HEALTH

WITH SPECIAL REFERENCE TO THE TROPICS.

By **B. N. GHOSH**, F.R.F.P.S.(Glasg.) and **J. L. DAS**, D.P.H.(Cal.)
With an Introduction by
Col. K. McLEOD, M.D., LL.D., I.M.S.(ret.), Hon. Phys. to H.M. the King
Crown 8vo. Full Cloth. Pp. 507 + xxiv. Price Rs. 6/- or 9s. 6d. net.

EIGHTH EDITION.

R. GHOSH'S MATERIA MEDICA

By **Lt.-Col. B H. DEARE**, I.M.S., and **B. N. GHOSH**, F.R.F.P.S. (Glasg.).
Crown 8vo. Full Cloth. Pp. xii. + 698. Price Rs. 7/- or 10s. 6d. net.

Publishers: HILTON & CO., P.O. Box 801, Calcutta, India.
London Agents: Simpkin & Marshall, Stationers' Hall, E.C. 4.

THE SURGERY OF THE HEART

By Sir CHARLES A. BALLANCE,
K.C.M.G., C.B., M.V.O., M.S., F.R.C.S.
Consulting Surgeon to St. Thomas's Hospital, &c.
Illustrated by 48 Figures. Demy 8vo. 10s. 6d. net.
Macmillan & Co.

Price 1s. With Illustrations.

APPLICATION OF TRUSSES

to HERNIÆ. Clinical Lecture delivered at King's College Hospital. By the late JOHN WOOD, F.R.S., Senior Surgeon to King's College Hospital. Reprinted from "Medical Examiner."
London: Matthews Brothers, 10, New Oxford-street, W.C.

DIABETES MELLITUS

By **Dr. FREDERICK M. ALLEN.**

Practical Manual. Reprinted from Nelson Loose-Leaf Medicine.

Sold only by
THE PHYSIATRIC INSTITUTE, Morristown, New Jersey (U S.A.)
Sent postpaid on receipt of price, **$2.25.**

ESSAYS ON THE SURGERY OF THE TEMPORAL BONE

By Sir CHARLES A. BALLANCE K.C.M.G.,
C.B., M.V.O., M.S., F.R.C.S.,
Consulting Surgeon to St. Thomas's Hospital, &c.
Illustrated by 125 Plates (40 in Colour) and 120 Figures.
***In 2 Volumes. Medium 4to.* Price 7 guineas.**
MACMILLAN & CO.

STAMMERING. SPEECH DEFECTS. VOICE TRAINING.

BEHNKE METHOD. Est. 1882.

Carried on by Miss BEHNKE, 39, Earl's Court-square, S.W. 5
"Pre-eminent success in the education and treatment of stammering and other speech defects."—*The Times.*
"Thoroughly physiological principles."—*The Lancet.*
"The method is scientifically correct and perfectly effective."—*Guy's Hospital Gazette.*
From a Harley Street Specialist.—"The condition is to a great extent a psychical one, and the admirable results obtained by yourself and your parents have in my opinion been to a great extent due to your personal psychical influence over your subjects. You are at liberty to use this expression of my opinion." (*This letter may be seen.*)
"Stammering: Cleft Palate Speech: Lisping." 2s. 4d. post free.
Of Miss BEHNKE, 39, Earl's Court-square, S.W.

STAMMERING

W. J. KETLEY, "Tarrangower," Brondesbury, N.W.
(30 years colleague of late B. BEASLEY, Brampton Park, Huntingdon.)
Those interested in the subject should write for his book, which will be sent post free.

CLOTH CASES FOR BINDING
THE HALF-YEARLY VOLUMES OF
"THE LANCET"
Can be obtained through any Bookseller in town or country or from THE LANCET Office.
Price 3s. 6d. each, by post 3s. 10d.
Offices: 423 and 424, Strand, London, W.C. 2; and 1, 2, and 3, Bedford-st.

H. K. LEWIS & Co. LTD.,

MEDICAL PUBLISHERS AND BOOKSELLERS.

Complete Stock of Recent Books in Medicine, and General Science, Note Books, &c.

MEDICAL AND SCIENTIFIC CIRCULATING LIBRARY.

Telephone: MUSEUM 1072.

ANNUAL SUBSCRIPTION FROM ONE GUINEA.

LIBRARY READING ROOM (FIRST FLOOR) OPEN DAILY TO SUBSCRIBERS.

136 GOWER STREET & 24 GOWER PLACE, LONDON, W.C.1.

Presidential Address

ON THE

MEDICAL ASPECTS OF SOME URINARY DISEASES.

Delivered before the Section of Urology of the Royal Society of Medicine

BY SIR THOMAS HORDER, M.D. LOND.,
PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

MANY of the problems met with in uro-genital diseases are of joint medical and surgical interest, requiring the combined efforts of surgeons and physicians for their proper elucidation, and offering a field for both types of mind and for both kinds of training. The contemplation of the physician and the technique of the surgeon combine to secure the patient's welfare, for in the last analysis it is the study of the pathology of his disease and a survey of his general state which must dictate both diagnosis and treatment.

THE ENLARGED PROSTATE.

At first sight it would seem that the diagnosis and treatment of simple prostatic enlargement with its mechanical disabilities, to which our first president, the late Sir Peter Freyer, made such a valuable contribution, is a purely surgical affair; and no doubt in a large number of cases the medical interest in this condition is reduced to a minimum. And yet the mortality in prostatectomy, even to-day, is by no means a negligible affair. It is probably not less than 10 per cent. by the two-stage method, nor less than 15 per cent. by the one-stage method.[1] And this consideration alone raises the question of the desirability of reducing, if possible, the risks of operation. When the patient is elderly, as he frequently may be; when the urine is infected, as is not uncommon; or when the trouble coexists with some other known defect which may introduce its special risk during or after operation—then the case is no longer entirely surgical. Elderly patients are sometimes the subjects of latent diseases (only discovered by a complete overhauling), which may, or may not, constitute a bar to a major operation. Recently, during a routine examination of a candidate for prostatectomy, I found the patient to be a case of chronic lymphatic leukæmia. The reason he had been sent to me was that he was short of breath, and this symptom was thought to be of cardiac origin. Some treatment led to great improvement in his condition, and he stood his operation very well. I think most careful surgeons like their prostate patients examined methodically before the final decision is given relative to excision. I know this is not an invariable rule, because a short time ago I was asked to see a very ill man a week after his prostate had been removed, and whilst examining the bases of his lungs I came across a good-sized lump, densely hard and firmly fixed to one of his ribs—no doubt a metastatic deposit from a primary growth in the prostate, which I learned had been unusually difficult to remove. When my surgical colleagues ask me to see these candidates for prostatectomy, I find, after examination, that they can be placed in one or other of these three groups: (1) Cases in which examination reveals no abnormality which is not commensurate with the patient's age, or only reveals trivial defects which cannot be regarded as likely to prejudice the results of operation. (2) Cases in which one or more defects add to the normal risk of the procedure—defects in the heart, kidneys, blood-vessels, bronchial tract, lungs, portal system or central nervous system—but in which the degree of the defect does not contra-indicate major surgery, given very definite surgical indications for the procedure. In a good many cases some preliminary treatment will reasonably lower this added risk. (3) Cases in which one or more of these same disabilities is present to a degree sufficient seriously to imperil life by the operation, and in which little or no improvement is to be expected from treatment.

The exact surgical position is, of course, made clear to the physician at the time the patient is sent for examination, or during consultation. The surgeon may estimate that eventual difficulties are not likely to arise within a time shorter than the duration of life estimated by the physician; if so, and especially if the patient come into group 3, prostatectomy is definitely discountenanced. In group 2 come a good many cases demanding very careful judgment, as all who are familiar with this type of patient will know.

Mr. John Pardoe, a friend and former colleague of many of us here this evening, was speaking to me recently of the cases, very grave but fortunately uncommon, in which late hæmorrhage followed prostatectomy, and he confessed himself puzzled as to their meaning. An obvious suggestion is that the underlying cause is sepsis; but this is by no means certain, or demonstrated, and here seems one more problem in the elucidation of which physicians and surgeons are probably both concerned.

Whilst it is the patient's general state, rather than the local lesion, which has medical bearings in prostatic enlargement, it is both the general and the local condition which are of interest to the physician in

NEPHROLITHIASIS.

Indeed, the surgical interest in this disease centres round the end-result rather than round the pathological process. It is true that our metabolic studies do not, as yet, give us any very definite lead in the direction of the prevention of uratic and oxalic deposits in the kidney and renal pelvis; but, at least, the main principles of prevention are understood, and it is fairly certain that a large number of patients are kept in a safe position with regard to the reformation of calculi when once they have been frightened into obedience by the experience of a nephrotomy or a nephrectomy. One of the most interesting problems that presents itself is the type of case in which calculi are known to be present in the kidney, perhaps in both kidneys, but the condition is largely latent as regards pain or hæmaturia. In these cases it is important to assess, as nearly as may be, the probable future history of the patient in respect of his trouble. His renal adequacy, and the question of sub-infection of the urinary tract—perhaps of the intermitting kind—are points which need investigation, and must be taken into account, together with points of general health and future mode of life, before a sound opinion can be given as to whether any surgical procedure shall be adopted and what its nature shall be.

PHOSPHATURIA AND OXALURIA.

Phosphaturia and oxaluria are probably of more medical than surgical interest, when not complicated by concretions of a gross kind. The known associations of both of these conditions with gastric and intestinal dyspepsia, and the close association of phosphaturia with nerve states, make it of paramount importance that the patients suffering from them should be fully and carefully examined. In the great majority of the cases it is found that such symptoms as are referable to the urinary tract are of secondary and not of primary origin, and that they yield to treatment on general medical lines, if this is carried out thoroughly and perseveringly. Again and again, however, this class of case requires, for its satisfactory elucidation, that both surgical and medical aspects of the problem be passed in review.

I will not stay to refer to difficult cases of *renal pain* with no obvious cause discoverable by the surgeon, and the moot question of exploration that arises in connexion with them; to cases of obscure *hæmaturia*,

[1] Since writing this Mr. Thomson Walker informs me that statistics at St. Peter's Hospital show a smaller total mortality than this: 8·13 per cent. in 1276 cases from 1901 to 1918.

or to cases of *dysuria* in which, again, instrumental examination reveals no renal or vesical origin. The importance of taking a wide view of all these cases as they present themselves becomes more and more apparent with the growth of knowledge. As I am this evening dealing with the urinary tract and not with renal conditions—though the distinction is frankly a loose one—I shall not enter into the question of mobile kidney and its obvious interest for both physician and surgeon.

INFECTION.

But it is, after all, the large and important subject of infection which provides the chief meeting-ground for physicians and surgeons in urinary diseases, whether the infection be of the urinary tract, of the kidney, or of the peri-renal tissues. I suppose the fact that so-called primary infections of the urinary tract are still very largely dealt with by surgeons is a survival of the old doctrine which taught that all infections were "ascending" in nature. Practitioners are still to be met who visualise a stone in the bladder, or some other gross lesion, so soon as a case of acute urinary infection presents itself. It is perhaps only fair to suggest that another reason why surgeons still hold a lien over many of these cases is that they have been more in the van of progress than have the physicians in the matter of elucidation of the problems connected with this subject. All the same, I am quite sure that it is in the interest of patients generally—I do not speak of any individual patient, nor of any individual practitioner—that the chief centre of interest in these cases should shift to the medical side. I say this quite apart from the fact that the general majority of these acute cases do very well with medical treatment. I say it because there are so many associated ætiological factors of a general kind, requiring careful consideration, in order to arrive at a complete diagnosis and a convincing programme of treatment. The state of the bowel, the nervous and vascular tone, the patient's habits—all these need investigation, because they have important bearings upon treatment during the actual attack, and even more important bearings upon prophylaxis against future relapses. This is not to say that the surgeon is incapable of taking long views, nor of giving excellent advice on all the points just mentioned, any more than it is to say that the physician is possessed of no technical ability. It is rather that this class of case is better adapted to the physician's routine methods of work than to that of the surgeon.

It is generally agreed that instrumental investigation is not only unnecessary but contra-indicated in acute urinary infections, except those of the urethra in gonorrhœa. And the more acute the infection the more emphatic the contra-indication. But from a lack of appreciation of the true pathology of these acute primary infections, this rule is by no means always followed. If, however, an acute infection persists, *despite adequate treatment* (and the opinion of someone fully versed in the particular problem may well be that the treatment has *not* been adequate) it is considered sound practice to use the cystoscope, and by its means determine more accurately the local conditions. There may then arise the question as to the desirability or otherwise of lavage of the pelvis of the kidney. Into this question I will not go fully this evening. I have an open mind in regard to this as, I hope, in regard to most other conditions in which we have alternative treatments, but I have not yet met with a case in which really careful and detailed management on general lines failed to cure, and in which pelvic lavage did. Let me repeat: "really careful and detailed management." And without going into particulars I may instance the dietetic part of the régime, which I find personally to be of the greatest importance, yet which is frequently quite neglected. In acute cases it too often happens that the firmly established British conviction that milk is the proper diet for all acute illnesses determines the matter here also. And even after the acute stage is over milk is often a staple article in the diet. My own experience leads me to exclude milk (as such) entirely from the diet in all these cases, and at whatever stage. In the cases of the disease occurring in nervous little girls, the suggestion to exclude milk from the diet is often met with great distrust by the mother, who fears loss of weight, and if this happens during the first week or so the milk is often promptly resumed. If time allowed I could refer to some very striking instances of emergence from prolonged acute attacks, and of rapid improvement in subacute and intermittent cases, as the direct result of changing the milk diet which the patients were taking for a diet free from milk, and also, I may add, free from eggs. I will only mention one case, that of an adult male who had been ill with an acute coliform infection for some six weeks, running a very high and intermitting temperature, and showing the usual depression, lethargy, foul tongue, constipation, and abdominal tympanites. After ordering a trial of antistreptococcus serum and silver injections intramuscularly, and getting no response in a couple of weeks, an eminent genito-urinary surgeon cut down upon both kidneys, freed them in the perirenal tissues, and stitched them in the horizontal position, explaining by the aid of diagrams that in this way the pelves would be able to drain more efficiently than was possible when the kidneys lay in the position chosen by Nature. The immediate result was complete anuria for three days, and a desperately ill patient. Then the former condition of affairs was gradually resumed, with the symptoms exactly as before, except that the abdominal distension was somewhat greater. This was the state of things when I saw the patient. From the naked eye and olfactory characters of the urine the infection was clearly coliform in nature. As a preliminary measure I changed the milk diet, expressing agreement with the rest of the treatment, and I promised to report concerning the urine, and whether or no I advised the use of a vaccine. Within three days, however, and before my report arrived, the patient had improved, and by the end of the week the temperature was normal.

We must not, of course, confuse the question, whether patients get well after pelvic lavage, with the question whether the lavage is necessary. Like many other organs in the body the kidney pelvis will tolerate chemical interference with little or no detriment, provided the technique be sufficiently skilled. No doubt each case must be treated on its merits—a principle, like a good many other principles, sufficiently hackneyed but too often disregarded. It is quite reasonable to make a local effort to reduce the pelvic infection in cases which continue to resist general measures of treatment. But I must confess that, in some of the cases that have come under my observation after the treatment has been adopted, the procedure has seemed to me to illustrate the triumph of technique over reason. I certainly think this is so where efforts have been made to soak the kidney with antiseptic, rather than to disinfect the pelvis. For if, as is allowed—nay, insisted—by one ardent apostle of this method, the kidney is really more sinned against than sinning in the matter of the infection, and if the microbe is not primarily but only indirectly responsible, by an upset in the "bacterial balance" (I borrow the expression for the moment) resulting from faults in the patient's general health—if things be so, then is it rational to think that an effort to get an antiseptic solution to percolate backwards through the kidney will materially alter the course of the disease?

The more I see of these cases of coliform infection the more convinced I am that until the function of the colon is healthy, the patient is not free from relapses or from a chronic bacilluria. And, since I saw, some years ago, a case of some 15 years' standing (if not longer) completely clear up after an emergency operation for intestinal obstruction caused by a band which had evidently caused some degree of mechanical difficulty for a very long time, I have given up any idea as to the possible duration of a bacilluria before

it should be regarded as incurable. In a chronic case, whether in child or adult, no point in treatment having the least bearing upon the bowel condition seems too trivial for attention. The choice of aperients is an important point, and patients should be made to understand that it is not the frequency or regularity of the bowel action that matters so much as the character of the stool passed.

CONCLUSION.

It is, however, my métier to-night not to deal specifically with treatment of any type of case, but rather to indicate the importance of taking broad views of the pathology underlying several types. Upon staphylococcus infection I will not dwell, but merely remind you of the great importance of the cases, because of their frequent obscurity and also because of their great gravity. Both the urinary infection and the peri-renal abscess that may develop are manifestations of a pyæmia, and although prompt surgical measures are of the utmost value in draining foci when these are established, the main onus of treatment is medical in coping with the underlying septicæmia.

Before leaving this important matter of urinary infection, the mere knowledge of the fact that no longer can we regard the mere discovery of micro-organisms in the urine of a patient as indicating an infection within the urinary tract is sufficient to establish the thesis that all cases should be considered to have possible medical bearings until this is proved not to be the case. For what is the actual position? Micro-organisms in the urine may indicate one of the following conditions: (1) A mere elimination of these from the blood stream without any urinary infection at all; (2) a focal infection at some point in the urinary tract; (3) a focal infection outside the urinary tract, but communicating with it either by gross continuity or by lymphatic spread; (4) a diffuse infection of the urinary tract; (5) that the urinary tract is a "carrier" of the micro-organism, as seems the nature of some cases of bacilluria. With all these possibilities before us it is, as I say, clear that wide views should be taken of any case with which we have to deal.

OBSERVATIONS ON POSTURAL PROTEINURIA.

BY G. A. HARRISON, B.A., M.B., B.CH. CANTAB.,
BIOCHEMIST, KING'S COLLEGE HOSPITAL, LONDON.

OWING to the interest which has recently been shown in "albuminuria of uncertain origin,"[1] the notes of four such cases are recorded below. If postural proteinuria be considered to include all cases of "albuminuria" which decreases or disappears on lying down only to increase or reappear on rising again, then the term includes at least two distinct groups of patients—viz., group (1) where no evidence is forthcoming of any organic lesion of the kidneys (or of any part of the urinary tract)—I propose to call this group "cyclic proteinuria" or "functional postural proteinuria"—and group (2) where there is evidence of some slight organic lesion of the kidneys (or of some part of the urinary tract)—e.g., slight pyuria, occasional casts (other than hyaline), &c.—I propose to call this group "organic postural proteinuria." Naturally, where the actual position of the lesion can be defined, the cases will be termed nephritis, pyelonephritis, pyelitis, cystitis, prostatitis, &c., even though the resulting proteinuria may be postural in type at some stage of the disease (for instance, occasionally in nephritis, during recovery, the albuminuria may become postural in character); I am not referring to such cases under the heading of organic postural proteinuria, but rather to those mild organic cases which cannot so be labelled.

[1] THE LANCET, 1920, i., p. 868, and 1921, i., pp. 116, 126, and 136.

Of the four cases I regard Nos. 1 and 2 as cyclic proteinuria (functional postural proteinuria) and Nos. 3 and 4 as organic postural proteinuria. It is more than likely that all such groupings are purely artificial. It is possible that it is merely a matter of the severity of the disease. Very mild organic lesions tend to recover of themselves and are apt not to be followed up. It may be that our methods of investigation are not sufficiently delicate to prove the existence of an organic lesion in cyclic proteinuria.

Importance of Careful Investigation.

From the point of view of examination for life insurance, there is a tendency to regard cases of cyclic proteinuria as healthy beings, whereas cases of organic postural proteinuria would probably be deferred or heavily loaded on account of the results of the microscopical examination of the deposit, if such examination was performed. The main purpose of this paper is to indicate the importance of very careful investigation of these cases of postural proteinuria, lest the patient belong to the second group (organic), and the early stages of disease be allowed to pass untreated. It is admitted that the majority of the second group probably recover spontaneously, but it is possible that some of them may advance, and so occasionally justify the suspicion with which postural proteinuria is viewed by insurance companies. It is suggested that the examination of the urine for protein at frequent intervals (e.g., every two hours for one or two days), combined with a microscopical examination of the centrifugalised deposit of some of the specimens in which protein is found, provides a simple (though somewhat laborious) method of determining whether the patient belongs to the group of organic postural proteinurics or to the group of cyclic proteinurics.

I consider the term "cyclic proteinuria" very appropriate for the latter group. It contains no suggestion of the underlying cause, but reminds one of the extraordinary variations which may occur in any given period of 24 hours—variations, which to my mind, it is essential to demonstrate before diagnosing cyclic proteinuria. "Albuminuria of adolescence"[2] is not sufficiently comprehensive because this condition may occur long before puberty; "hæmatogenous albuminuria" is far too comprehensive because many physicians use it to embrace albuminuria resulting from various anæmias, or occurring in the course of acute specific fevers, &c. "Proteinuria" is obviously a more accurate term than "albuminuria."

I wish particularly to emphasise a fact often overlooked in judging the value of quantitative renal function tests—viz., that it is estimated that probably not until about three-quarters of the total kidney tissue has functionally been put out of action do such tests reveal any abnormality. I refer, of course, to estimations of the functional activity of the two kidneys together. The surgeon is able with the aid of ureteric catheterisation to compare the function of the two kidneys. How far "catheter inhibition" may interfere with the absolute quantitative measure of the function of each kidney separately is at present imperfectly known. Obviously, therefore, in cyclic proteinuria the current tests of renal efficiency will chiefly be of negative value in that they exclude very gross kidney lesions. While discussing this point I should like to draw attention to the case published by Dr. Ivor T. Davies in THE LANCET of Dec. 18th, 1920. It is perfectly reasonable to consider that at the time the diastatic index was normal (a month before death) probably more than a quarter of the total kidney substance was functioning—that is all the result implied at the time the test was made. It is necessary to repeat kidney function tests at intervals if it is desired (*a*) to show that the amount of damage has not reached the "three-quarter line,"[3] or (*b*) the degree of damage having reached that point, to obtain

[2] Dr. R. Hingston Fox: THE LANCET, 1921, i., 116.
[3] Three-quarters is adopted merely as a rough working hypothesis.

an idea of the rate at which the disease is progressing. The results given in Table I. obtained with the "urea concentration" test (MacLean and de Wesselow) in an advanced case of nephritis are given to illustrate my meaning.

TABLE I.

Patient aged 52. Syst. B.P. 130–140. Œdema +++. Total coagulable protein ++++.

Date.	Urea concentration tests.						Remarks.
	1st hour.		2nd hour.		3rd hour.		
	Urea %	Urine in c.cm.	Urea %	Urine in c.cm.	Urea %	Urine in c.cm.	
30/12/20	2·38	60	2·13	90	1·89	30	Urea concn. pract. normal.*
14/1/21	1·49	60	1·52	60	1·70	60	Urea concn. obvsly. dmnshd. (2 wks. interval).
22/1/21	1·74	90	1·90	120	1·74	150	Urea concn. slightly better (1 wk. interval).
28/1/21	1·78	105	1·94	90	1·77	120	Urea concn. stationary (1 wk. interval).
7/2/21	1·40	30	1·25	60	1·28	30	Urea concn. obvsly. worse again (1 wk. interval).†

* Probably at least ¼ kidney tissue functioning.
† Probably less than ¼ kidney tissue functioning.

To my mind it is not at all extraordinary that Dr. Davies's patient died within one month of normal results for certain kidney function tests. The case is a good example of the danger of exaggeration of the usefulness of a single test. It is surely just as necessary in the case of the kidneys to weigh up all the evidence in estimating functional capacity as in the case of any other organ—e.g., the pancreas. Chemical tests provide most valuable additional means of estimating function—sometimes indispensable, often of little help—but no chemical pathologist claims that they do away in any sense with the necessity for complete clinical examinations of patients. Their great value lies in the fact that they enable a quantitative picture of the damage done to be made on the day of the test. With reference to the protein precipitated by acetic acid in the cold "lipoid-globulin" (Mackenzie Wallis) or "nucleoprotein," or whatever it may eventually be shown to be—no constant proportion between this protein and the total coagulable protein in any given sample of urine could be demonstrated in the three cases tested. (The urine of No. 4 was not tested for this protein.) The variations were from 0 per cent. to 100 per cent.

The Four Cases.

It was at the suggestion of Dr. G. F. Still that the urine was examined at frequent intervals (two-hourly by day and occasionally at night). The results of the examinations of Cases 2 and 4 are given in tabular form, with brief accounts of the four cases and a table of kidney function tests.

Brief Accounts of the Four Cases.

CASE 1.—E. C. Female. First admission, Jan. 31st, 1918, aged 7 years 11 months. "At intervals of about two months during the last two years the patient has complained of 'pain in the back' with passage of 'thick urine.' The backache may be accompanied by headache and very occasionally by vomiting. During such attacks the child takes no interest in anything, and her bowels are apt to be constipated, though she appears to require to micturate more frequently than is her wont. She has never complained of her eyes troubling her. No swelling has ever been observed by her mother.

"On examination throat normal, heart a little enlarged, its apex being one finger's breadth to left of nipple line in fifth intercostal space; a systolic murmur over the pulmonary area. Discs normal; urine with specific gravity of 1020, contains no sugar. Five early morning specimens obtained on separate days before rising contained no albumin. Shortly after rising, however, urine contains protein. Temperature normal." She was in the ward a little over a fortnight; on three occasions her evening temperature was recorded as 100° F.; otherwise nothing of note was observed until she developed diphtheria and was transferred to a fever hospital on Feb. 15th, 1918.

Second admission, Sept. 16th, 1919, age 9¼ years. Her doctor found "albumin" in the urine and sent the case to hospital as "nephritis." "Every six or eight weeks the child suffers from attacks of listlessness with anorexia and slight vomiting after breakfast. Such illness generally lasts for two or three days and may be accompanied by 'bad nights,' the child lying awake till midnight. She never complains of headache but suffers from constipation. She does not have 'sore throats' and no swelling of any part of the body has been observed. She has been ailing thus for two or three years. At 1 year 3 months she was 'comatose' for two days. When 2 she caught chicken-pox, when 4 she suffered from whooping-cough, and when 5 from measles, and just before her eighth birthday she developed diphtheria, as already recorded under 'first admission.'

"The patient has one brother of 7½ who is healthy and has no albuminuria. Her father had influenza in January, 1919, followed by double 'pneumonia' and 'bronchitis.' After this attack albuminuria was reported. His urine had not been examined before this illness. There is no albumin now (see below). Her mother is healthy and has had no miscarriages; 13 years ago she had 'pleurisy.' No albuminuria has ever been found. There is no question of consanguinity, and no history of albuminuria in either the

TABLE II.—*Showing Results of Urinary Examinations.*

CASE 2.—Q. S., aged 19, female. Total days during which urine was examined at frequent intervals = 31, of which 7 are tabulated.

Date, &c.	Time of day.	Total coag. prot.	Date, &c.	Time of day.	Total coag. prot.
5/1/21	10 a.m.	0	30/1/21	2 p.m.	V. sl. tr.
Up 1.15 p.m.	12 noon	0	(cont.)	4 p.m.	Sl. tr.
Bed 5 p.m.				6 p.m.	Trace
	2 p.m	0		8 p.m.	V. sl. tr.
		++		10 p.m.	0
	4 p.m.	0·11 %	31/1/21	3 a.m.	0
		Aufrecht	Up 6.15 a.m.	6 a.m.	0
	6 p.m.	0	Bed		
	8 p.m.	0	8.45 p.m.	8 a.m.	V. sl. tr.
25/1/21	6 a.m.	0		10 a.m.	0
Breakfast				12 noon	V. sl. tr.
6.5 a.m.	8 a.m.	+		2 p.m.	V. sl. tr.
Up 6.25 a.m.				4 p.m.	0
Lunch				6 p.m.	V. sl. tr.
10.5 a.m.	10 a.m.	Trace		8 p.m.	0
Dinner				10 p.m.	0
12.5 a.m.	12 noon	Trace	1/2/21	3 a.m.	0
Tea 4.5 p.m.	2 p.m.	0	Up 6.30 a.m.	6 a.m.	0
Supper			Bed		
8.5 p.m.	4 p.m.	Trace	8.30 p.m.	8 a.m.	V. sl. tr.
Bed	6 p.m.	V. sl. tr.		10 a.m.	V. sl. tr.
8.30 p.m.	8 p.m.	V. sl. tr.		12 noon	V. sl. tr.
	10 p.m.	0		2 p.m.	0
26/1/21	3 a.m.	0		4 p.m.	0
29/1/21	3 a.m.	0		6 p.m	0
Up 6.35 a.m.	6 a.m.	0		8 p.m.	0
Bed 8 p.m.	8 a.m.	Trace		10 p.m.	0
	10 a.m.	Trace	2/2/21	3 a.m.	0
	12 noon	V. sl. tr.	Up 6.30 a.m.	6 a.m.	0
	2 p.m.	0	Bed		
	4 p.m.	0	8.30 p.m.		
	6 p.m.	V. sl. tr.		8 a.m.	V. sl. tr.
	8 p.m.	V. sl. tr.		10 a.m	+
	10 p.m.	0		12 noon	++
30/1/21	3 a.m.	0		2 p.m.	++
Up				4 p.m.	Sl. tr.
12.30 a.m.	6 a.m.	0		6 p.m.	V. sl. tr.
Bed				8 p.m.	V. sl. tr.
8.45 p.m.	8 a.m.	0		10 p.m.	V. sl. tr.
	10 a.m.	0	3/2/21	6 a.m.	0
	12 noon	0			

Meals.—Meals after 25/1/21 were given uniformly as on that day.

Tests for Nucleo-protein.—These were performed on 5/1/21 at 10 a.m. and 12 noon, when none was discovered; on 25/1/21 at 8 a.m., 10 a.m., and 12 noon, at each of which times 5 per cent. was discovered: on 2/2/21, at 10 a.m., 12 noon, and 2 p.m., when none was discovered.

Deposit.—The following were results of tests for deposits: 25/1/21, 8 a.m., pus cells 0, casts 0, oxalates 0; 4 p.m., pus cells 0, casts 0, oxalates 0.

Remarks.—25/1/21 and 29/1/21, albuminuria disappears and then reappears whilst erect. 30/1/21, cal. lact. gr. xxx. at 3 p.m., 8 p.m. 31/1/21, cal. lact. gr. xxx. at 8 a.m., 2 p.m., and 8 p.m. Cal. lact. gr. xxx. t.d.s. appears to make very little difference to the albuminuria. Note that if the urine had been examined on 31/1/21 at 10 a.m. or at 4 p.m. only, a cure might have been claimed—i.e., careful controls are essential. 1/2/21, 8 a.m., cal. lact. gr. xxx. At the end of the six doses of cal. lact. the albuminuria does stop temporarily. 2/2/21, there is an unusually large amount of albumin in the urine immediately after the cessation of treatment by cal. lact.

TABLE III.—*Urinary Examinations.*

CASE 4.—S. G., aged 17, male. The urine of this patient was examined at short intervals for 1½ days only.

Date.	Time of day.	Total coag. prot.	Deposit.	Posture with time.
21/3/21	3 a.m.	V. sl. tr.	—	In bed.
	6 a.m.	V. sl. tr.	—	—
	8 a.m.	0	—	Up 8.15 a.m.
	10 a.m.	+	Hyal. casts, v. few Epith. cells, few W.b.c., v. few R.b.c., v. few Mucus, trace	—
	12 noon	Trace	—	—
	2 p.m.	+ + +	Casts, nil E.p.c., few W.b.c., v. few Mucus, trace.	—
	4 p.m.	+ +	Same as at 10 a.m.	—
	6 p.m.	+ + +	Same as at 2 p.m.	Bed 6.30 p.m.
	8 p.m.	+	—	—
	10 p.m.	0	—	—
22/3/21	6 a.m.	0	—	—
	7 a.m.	V. sl. tr.	—	—
	8 a.m.	V. sl. tr.	—	—
	9 a.m.	0	—	Up 10 a.m.

Remarks.—21/3/21 (3 a.m. and 6 a.m.): Albuminuria while recumbent. 22/3/21 (7 a.m. and 8 a.m.): Albuminuria recurs though lying flat.

maternal or the paternal grandparents. Specimens of urine have been obtained from father, mother, and brother, in the morning immediately before rising, at midday, and in the evening. No albumin had been found in any of these specimens.

"The child is pale with a waxy complexion; dark lines are visible under her eyes and she is apt to get 'styes.' No abnormal degree of lordosis is present. Her tongue is clean and both tonsils have been removed except for a fragment of tonsillar tissue on the right. Nothing abnormal in lungs or abdomen; apex of heart one finger's breadth to left of nipple line in fifth intercostal space, but heart sounds normal; fundi and discs quite normal; urine, acid to litmus has a specific gravity of 1025. Albumin, sugar, and acetone bodies all absent. The deposit shows nothing abnormal, no calcium oxalate crystals or casts. Albumin in evening specimen if the girl is allowed to get up during day; it never reappears while recumbent. On several occasions protein has disappeared and then reappeared whilst erect. The patient passes a normal quantity of urine during the 24 hours." She stayed in hospital until Oct. 7th, 1919, for the purpose of the observations here given. She vomited once during the evening, probably due to an indiscretion in diet. She developed a stye in her left upper eyelid on Oct. 1st, 1919. Otherwise she remained perfectly healthy throughout.

On March 24th she came to see me as an out-patient: "She has been up and about like other healthy children since leaving King's College Hospital on Oct. 7th, 1919, nearly six months ago. She has suffered two or three attacks of listlessness with anorexia, and there has been very occasional morning vomiting during these attacks (compare history obtained on second admission). Otherwise she has been perfectly well. She has been to school throughout. I have examined her thoroughly all over but find nothing fresh. Her abdomen has been carefully palpated both in the erect and the recumbent position for any sign of movable kidneys with negative result. The lower margin of the liver is just palpable."

In May, 1921, this patient developed miliary tuberculosis, culminating in death on June 28th. At autopsy the findings were typical of the condition. The lungs were so closely studded with miliary tubercles that on section no normal tissue was anywhere visible. The mediastinal glands were much enlarged and caseous, especially about the left bronchus. Both kidneys were slightly enlarged; cortex pale; capsule slightly adherent; surface of each nodular, due to cortical tubules. On section both showed very numerous tubercles, especially in the cortex; the left organ also contained a fair number in the medulla. Histologically a complete investigation has not yet been made, but it is doubtful whether anything of value re the postural proteinuria could be demonstrated with such extensive tuberculous changes superimposed. The cause of death is of special interest in that Mazzolini (*Riv. Osped.*, Jan. 15th, 1920) regards postural proteinuria as possible evidence of incipient tuberculosis.

CASE 2.—Q. S., age 19, female. "Admitted December, 1920, complaining of malaise and pain in the back for two years; has not been able to work since November, 1919, because she often feels faint. Has had to come out of church for the same reason; actually fainted twice, a year ago. Pain in back not relieved by lying down. She has never vomited. Vision subjectively is perfect; no swelling ever observed. She had measles and whooping-cough as a child, and scarlet fever at 12. Seven years ago she attended this hospital for 'spinal curvature' and believes that she also had a 'bad heart.' Both parents alive and well; no consanguinity. Three brothers and one sister alive and well. Mother's sister died at the age of 40 from 'kidney trouble.'

"On examination, patient's complexion pale, she looks frail and 'weedy,' and is somewhat thin. No glandular enlargement. Slight lordosis is present. Nothing abnormal detected in any of the systems. Kidneys not palpable in either erect or recumbent position. Systolic blood pressure, while recumbent, varies from 98 to 112 mm. Hg, and while upright from 92 to 116; after taking exercise it has risen to 136, falling to 112 in five minutes, temperature normal. Posture is perhaps the chief, though not the only, factor in the production of albuminuria (see urinary table). On one occasion she has stayed up all night and has gone to bed in the day. As would be expected she passed albumin that night, but not during the day, while in bed. Protein has never reappeared in the urine while the patient is recumbent. Calcium oxalate crystals are frequently found in the urinary deposit, but never any cells or casts. Cultures of the urine have not been made. The effect of calcium lactate is shown in the urinary table. The quantity of urine in the 24 hours is normal. She has felt faint and turned very pale several times while in hospital, and has had to lie down, but has never become unconscious. Menstruation normal; X ray of chest reveals nothing abnormal."

CASE 3.—A. K., age 15, male. "Admitted January, 1921, for investigation. Albumin has been found in the urine, and there is a history of two 'fits' (1) 18 months previously; (2) Christmas, 1920. The history is not typical of epileptic fits; more probably they were only faints. Otherwise the boy has been perfectly healthy; no shortness of breath, no swelling, 'vision perfect.' Had measles and chicken-pox as a little boy and German measles at 11; has never had scarlet fever or any sore throats. His father and mother alive and well; they are second cousins. He has one brother of 24 who is said to have albuminuria, and one sister of 21 who has fainted four times. Specimens of urine have been obtained from brother and sister in the morning before rising, at midday, and in the evening. The brother's midday specimen contains a very slight trace of protein, but nothing abnormal in centrifugalised deposit. The other specimens are protein-free, as are those obtained from the sister. Further investigation is not possible.

"On examination the boy looks perfectly healthy. Nothing abnormal has been discovered except for the evening temperature of 99° to 100° F., the leucocytosis, and the urinary findings. No lordosis; X ray chest normal. Kidneys not palpable erect or recumbent. Discs normal. No œdema. Testes and cords normal. White blood corpuscles 21,600, of which polymorphs = 76·4 per cent., eosinophils 1·2 per cent., lymphocytes 16·8 per cent., hyalines 5·2 per cent., and mast cells 0·4 per cent. Wassermann negative. Systolic blood pressure recumbent = 122, erect 96 to 122. The albuminuria is postural in type, but on several occasions protein has reappeared while the patient remained in bed. On two occasions the percentage of protein excreted has been high. At different times granular casts, hyaline casts, and leucocytes have been found in very small numbers; calcium oxalate crystals have never been seen; there is always a trace of mucus. Culture of urine on one occasion yielded an enterococcus, on second occasion sterile. Tubercle bacilli have not been found. Calcium lactate (gr. xxx. t.d.s. for six doses) has not controlled the albuminuria. The quantity of urine passed in the 24 hours is normal. The very marked variations in the quantities of protein passed on different days suggest that the albuminuria may have been postural in type simply as a result of the drainage of the foci of disease in the erect attitude."

The boy was readmitted in April, 1921, under Mr. Thomson Walker, who has very kindly allowed me to report the following findings: cystoscopy, nothing abnormal observed in the bladder or at the mouths of the ureters. X ray of kidneys: no evidence of calculus. Catheterisation of ureters; free flow of urine from each side; catheter passed more easily on the left than on the right. The urine from the right kidney contained a fair number of granular and a few hyaline casts; on the addition of a few drops of salicylsulphonic acid, the specimen went almost solid, indicating the presence of considerably more protein than could be accounted for by the small quantity of blood resulting from the passage of the catheter; culture sterile. No casts were found in the urine from the left kidney; there was a trace of protein due to the slight amount of blood resulting from the operation.

CASE 4.—S. G., aged 17, male. Admitted March 15th, 1921, for investigation. Albumin had been found in urine during a medical examination required when applying for an appointment. Family history and past history: *nil ad rem.*

On examination the patient is tall, thin, and "weedy"; pale complexion; nothing abnormal found in any of the systems. Blood pressure is 122/85; temperature is 99° F., nearly every evening. The albuminuria is postural in type, but protein reappears while recumbent (see urinary tables).

TABLE IV.—*Results of Kidney Function Tests.*

Test.	Normal findings.	Cases. 1	2	3	4
Urea conc. (MacLean and de Wesselow). Urea % / Urine c.cm. at end of—					
1st hour ..	—	0·81 % / 240 c.cm.	2·84 % / 6 c.cm.	3·64 % / 60 c.cm.	3·32 % / 120 c.cm.
2nd hour ..	2 to 4 %	2·59 % / 120 c.cm.	3·53 % / 105 c.cm.	3·78 % / 60 c.cm.	3·44 % / 70 c.cm.
3rd hour ..	—	—	3·58 % / 48 c.cm.	3·10 % / 60 c.cm.	—
Diastatic index (24 hours' urine).	6 to 20 units.	—	10	6·7	10
Alkaline tide after water meal (Leathes)	Alkaline tide present.	—	Present.	Present.	—

Remarks.—All the above kidney function tests are normal in all four cases. Therefore no very gross lesions of the kidneys are present. Probably considerably more than one-quarter of the total kidney tissue is functioning (at the dates of the tests) in each patient.

TABLE V.—*To Compare the Two Groups of Postural Proteinuria (Cases 1, 2, 3, and 4) and to Summarise the Findings.*

Point investigated.	Cyclic proteinuria or functional postural proteinuria. 1	2	Organic postural proteinuria. 3	4
Reappearance of proteinuria while recumbent	No	No	Yes	Yes
Casts—Hyaline ..	0	0	Yes	Yes
Granular ..	0	0	Yes	0
Deposit—				
White blood corpuscles	0	0	Yes	Yes
Red blood corpuscles	0	0	0	Yes
Epithelial cells ..	0	0	0	Yes
Oxalate crystals ..	0	Yes	0	0
"Mucus"	—	0	Yes	Yes
Maximum percentage of protein passed ..	Low	F. low	High	High
Esbach	0·04 %	—	—	—
Aufrecht	—	0·11 %	0·33 %	—
Disappearance of proteinuria while erect ..	Yes	Yes	Yes	—
Quantity of urine in 24 hours	N.	N.	N.	N.
Control of proteinuria by calcium lactate ..	No†	Incomplete‡	No‡	—
Kidney function tests ..	N.	N.	N.	N.
Bacteriology of urine ..	—	—	Ent. T.B. = 0	Sterile
Œdema	Nil	Nil	Nil	Nil
Optic discs and fundi ..	N.	—	N.	—
Systolic blood pressure—				
Recumbent	—	98 to 112	122	—
Erect	—	92 to 116	96 to 122	—
Kidneys palpable ..	No	No	No	No
Lordosis	No	Slight	No	No
Temperature	N.	N.	E. 99° to 100° F.	E. 99° F.
Leucocyte count ..	—	—	21,600	—
Wassermann reaction ..	—	—	Neg.	—
Cardiac and other systems*	N.	N.	N.	N.

* Excluding the urinary system.
† Gr. viiss. t.d.s. for 7 days. ‡ Gr. xxx. t.d.s. for 2 days.
N., normal. F. low, fairly low. Ent., enterococcus.
E., evening. Neg., negative.

Centrifugalised deposit contains a very small number of hyaline casts, epithelial cells, white and red blood corpuscles; always a trace of mucus. No oxalate crystals ever observed. Culture of urine sterile. Total volume of urine per 24 hours is normal.

Conclusions.

1. "True proteinuria" probably never reappears in the recumbent position in cases of cyclic proteinuria. If proteinuria does recur while the patient is lying in bed an organic lesion should at once be suspected. "True proteinuria" is emphasised because it is obviously necessary to make certain that the protein does not come from other parts—e.g., the vagina.

2. Posture appears to be an important factor in causation but not the only factor, because in three cases on certain days protein disappeared from the urine while still in the upright position.

3. Cases 1 and 2 are regarded as true cyclic proteinurics. Case 3 is regarded as organic for the following reasons: (*a*) Proteinuria occurred while recumbent on several occasions; (*b*) a few granular casts and a few degenerate pus cells were found more than once; (*c*) the boy had an evening temperature of 99° to 100° F., and a leucocytosis of 21,600 for which no cause was found unless it was kidney disease. Culture of the urine yielded an enterococcus on one occasion (but was sterile at a later date); (*d*) occasionally the boy passed large amounts of protein—e.g., 0·33 per cent. (Aufrecht). Case 4 is also regarded as organic because of pyuria, the fact that protein recurred while recumbent and occasionally was large in amount, and the evening temperature of 99° F.

4. The albuminuria of a small organic kidney lesion may be postural in type, or in other words, the amount of protein may fluctuate in organic albuminuria so as to simulate a condition of functional cyclic albuminuria. In the latter condition, however, once the protein has disappeared from the urine as a result of lying down, it probably never reappears while the ordinary recumbent position in bed is maintained.

5. It is possible that in certain cases of mild organic disease of the kidney (or other part of the urinary tract) the proteinuria is postural in type simply owing to the drainage of the foci of disease in the erect attitude.

6. The fact that in postural proteinuria the "albumin" may appear, then disappear, and then reappear (the erect posture being maintained throughout) should make us very chary of claiming cures as a result of any particular treatment (e.g., by cal. lact.). Careful controls are essential.

I desire to express my thanks to Dr. G. F. Still, Dr. H. W. Wiltshire, Mr. J. W. Thomson Walker, and Dr. A. C. D. Firth for the opportunity to investigate these cases.

THE ESSENTIAL CAUSES OF ADENOIDS AND THEIR ASSOCIATION WITH RICKETS.

BY H. MERRALL, M.B., CH.B. VICT.

IT is obvious to even a desultory reader of contemporary medical journals that many conflicting opinions, and some downright ignorance, exist on the subject of that hyperplasia of the pharyngeal tonsil known as adenoid vegetations. Concerning the ætiology of this extremely common condition the writings even of deservedly acknowledged experts are vague and unconvincing, while their opinions on the proper treatment of the secondary enlargement of the palatine tonsils are flatly contradictory. Communications have been read at important medical gatherings preaching the rank heresy that operative treatment is unnecessary; and in widely read daily papers the public is periodically misinformed on the subject of this, perhaps the commonest, and in its national aspect perhaps the most important, disease of our time. The exacting work of the general practitioner may sufficiently excuse his lack of knowledge, and the significance of the immense accumulation of expert observations is largely misinterpreted or overlooked.

In this paper I shall endeavour to show: (1) the essential cause of "adenoids"; (2) that the close association between adenoids and rickets, long ago pointed

out by Biaggi,[1] Marfan,[2] and others, may be due to a close relation of the causes of these two diseases.

Causes of Adenoid Vegetations.

Essential Causes Overlooked.—On the subject of adenoid vegetations, as they were termed by Meyer in his classical description, much has been written, but their essential cause has, in the main, been overlooked; and lacking a clear understanding of the cause of this hyperplasia of the pharyngeal tonsil, efforts at prevention must be ill directed and ineffectual. But an experience of many years and of a large number of cases teaches me that the essential ætiological element can be clearly differentiated, not only with great advantage to methods of prevention but also with an increase of understanding of the numerous complications of this common and serious condition.

Causes according to Rhinologists.—StClair Thomson,[3] in his remarkably clear and comprehensive textbook, mentions heredity, status lymphaticus, climate, and catarrh. Ballenger[4] refers to the exanthemata. Tilley[5] believes in heredity but quotes Osler on the influence of disturbances in the lymphatic system. Ball[6] lays stress on the exanthemata, particularly measles, whilst Greville Macdonald[7] many years ago pointed out the influence of cold and damp climates, the frequency with which the Jewish race is affected, and, in common with many other observers, mentioned the influence of frequent cold-catching, although he, like most others, thought that this latter might be an effect rather than a cause. Indeed, this is one of the vicious circles so familiar to all rhinologists: adenoids cause catarrh and catarrh causes adenoids.

Causes according to Pediatrists.—H. Campbell[8] thinks that hyperplasia of the pharyngeal tonsil is part of a general hyperplasia of adenoid tissue throughout the body—i.e., status lymphaticus—due to a defect in the plasma resulting from intestinal indigestion caused by imperfectly salivated food. Cautley,[9] whilst attaching some importance to the vicious circle of adenoids and catarrh, believes bottle-feeding and rickets mostly to blame. He thinks almost all children with adenoids suffer from rickets, but that rickets may be present without adenoids. Pritchard[10] believes that Mellin's food, which is largely maltose (the penultimate stage in the digestion of starch) renders children particularly liable to the disease. Stuart Low has, however, pointed out that adenoids are extremely common in breast-fed children.

Symptoms and Sequelæ of Adenoid Vegetations.

In the compass of an article it will be impossible to do more than tabulate the symptoms of adenoids, which are classified by their production of (1) nasal obstruction, (2) reflex phenomena, (3) secondary affections, (4) constitutional changes.

1. *Nasal Obstruction.*—The posterior naso-pharyngeal wall in many subjects presents a plane surface; in a few it is protuberant over the situation of the second and third cervical vertebræ, and in the latter cases a moderate degree of enlargement of the pharyngeal tonsil causes obstructed respiration. In other cases a large mass of adenoid tissue, infiltrated with the products of inflammation and giving rise to effects other than obstruction, may be sunk in a recess. In infants stenosis causes convulsions, laryngo-spasm, and vomiting; they are said to swallow their tongues and fight for breath. In older children are apparent mouth-breathing, snoring, breathlessness, slowness at meals or bolting of food, and alterations in the voice, which becomes "dead." "Clapham Common" becomes "Claphab Cobbod." These patients are said to speak through the nose, which is precisely what they do not do. The most pleasing quality of the human voice depends upon the naso-pharyngeal passage being free and its walls smooth. The mouth is dried by the passage of air, and thirst results. The presence of muco-pus behind or below the soft palate is always pathognomonic.

2. *Reflex Phenomena.*—Such are paroxysmal cough, sneezing, stridulous breathing, laryngo-spasm, asthma, chorea, convulsions, epilepsy, nocturnal enuresis, restlessness, stammering, and stuttering. To relieve most of these symptoms—even epilepsy—by operation is a matter of daily occurrence; in obstinate recurring colds with attacks of dyspnœa, and in cases of nocturnal enuresis, results of operation are remarkable.

3. *Secondary Affections.*—The commonest and most important complication is the affection of the ear. More than 60 per cent. of patients with adenoids are more or less deaf. Inflammation spreads through the Eustachian tubes and may extend through the tear duct, leading to conjunctivitis and other ocular troubles. The appearance of stupidity is due to the open mouth, to deafness, and to deficient oxygenation of the blood. Gastric disturbances are caused by the extension of catarrh into the stomach, and by the swallowing of affected mucus—hence dyspepsia, anorexia, morning nausea, and vomiting. Cervical adenitis, at first simple inflammatory hyperplasia, but apt to become tuberculous, is another important secondary affection.

4. *Constitutional Changes.*—The upper jaw undergoes a striking alteration in shape, which many observers ascribe to rickets. It is usually bent upwards, but sometimes forwards. The normal flattish Norman arch becomes Gothic; this upward bending brings the alveolar edges of the jaw closer together; the teeth become crowded and irregularly set. In some cases the incisors and canines appear one in front of the other. The upward displacement also obstructs nasal breathing, for the roof of the mouth is the floor of the nose; in this manner deflection of the septum nasi is accounted for. Alteration in the shape of the jaw also accounts for the characteristic "adenoid-facies." Chest deformities arise from impeded nasal respiration, particularly where oral breathing is also obstructed, as by enlarged palatine tonsils. Inspiration draws in the lower ribs with retraction or depression of the manubrium sterni, or the ribs are drawn upwards along the costo-chondral margins, and the child becomes pigeon-breasted. Besides these changes, I have frequently noted lateral curvature of the spine, and in an experience of well over a thousand cases have almost invariably found falling of the plantar arch with the production of marked flat-foot. According to Reinhardt, 17 per cent. of United States recruits were rejected for flat-foot alone—an indication of the extent to which that disability exists among the people of a vigorous nation. Other important disabilities are occasioned by the interference in education and physical development brought about by repeated attacks of feverish colds, often mistaken for the preliminary stage of measles and constituting—when the outer members of Waldeyer's ring of lymphatic glands are affected—the so-called glandular fever. Extension of catarrh or inflammation into the Eustachian tubes, with consequent deafness, may partly explain the fact that many school children of this type occupy the lowest positions in their classes. Unfitted by their disabilities for games, the young subjects of adenoid growth frequently become soured by misunderstanding and their sense of deficiency in comparison with other children. They are seldom heard whistling or singing. In an institute devoted to the treatment of rickety children, Biaggi[11] found 90 per cent. had adenoids, while according to Marfan[12] all adenoid children are the subjects of rickets. Deformities of jaw, spine, feet, and chest—catarrh of the naso-pharynx extending to the ears, nose, larynx, lungs, stomach, and intestines—what are these but symptoms of rickets?

Causes of Rickets.

According to most authorities the causes of rickets are chiefly dietetic. Bottle-feeding, starchy food, and other improper alimentation are mostly held to blame. But, as previously mentioned, Stuart Low[13] pointed out the common occurrence of adenoids in breast-fed children, whilst according to Pritchard[14] Mellin's food renders them particularly liable to the condition.

The Catarrhal Side of Rickets.—R. Hutchison[15] quotes with approval two sayings of Sir Wm. Jenner's: first, "Rickets is the most common and in its indirect results the most fatal of all the diseases which peculiarly affect children"; and secondly, "It would be as reasonable to regard rickets as a disease of the bones only, as it would be to regard typhoid fever as merely a disease of Peyer's patches." And Dr. Hutchison remarks, "You must remember there is a visceral side as well, which so far as effects upon life are concerned, is more important than the mere deformities due to alterations in the bones" and "The visceral changes consist first and chiefly of catarrhs affecting the lungs, stomach, and intestines."*

Rickets and adenoid vegetations were both known long before Meyer and Glisson described them. Reference to the paintings of the Renaissance or to the sculptures of antiquity will show the characteristic "adenoid facies," while Hippocrates frequently referred to the disease; he wrote, "those who suffer from headache and running ears have a high arched palate and irregular teeth."

* Several of the photographs illustrating Dr. Hutchison's work on children's diseases are very characteristic of adenoids

At a meeting of the section of the Royal Society of Medicine devoted to the subject of "the causes and non-operative treatment of adenoids," to which reference has been made, many causes of adenoids were given by various speakers—e.g., faulty digestion of starch, bottle-feeding, improper food; all these are also claimed by pediatrists to cause rickets. It will doubtless be urged that defective feeding will produce rickets in animals, but Zeim's experiments showed that deformities in the neighbouring bones are induced in puppies by closing up their nostrils.

Essential Element of Causation.

The essential element in the causation of adenoid vegetations is the overworking of the lymphatic glands situated behind the soft palate by repeated colds and by the exanthemata.

In this situation exist a number of collections of adenoid or lymphoid tissue, called lymphatic glands, and when in certain places, tonsils. As Waldeyer pointed out, they form a double ring, inner and outer, the members of the latter ring being situated amongst the muscles of the neck and under the skin, and only becoming obvious when swollen, inflamed, or suppurating. The inner ring is formed by the pharyngeal tonsil,[6] also called Luschka's gland) by the Eustachian tonsils (collections of lymphoid tissue situated at the orifice of the tubes of that name), by the palatine and lingual tonsils, and by various unnamed patches of adenoid tissue on the walls of the pharynx and naso-pharynx. The glands of this inner ring all possess two striking features common only to them and to certain similar structures in the alimentary canal —i.e., they appear on the surface, are subepithelial instead of being covered by superimposed structures, as are the lymphatic glands of the limbs and trunk; and they possess no afferent lymphatic vessels. Enlargement or catarrhal inflammation of the naso-pharyngeal tonsils constitutes adenoids. These tonsils are not dangerous vestigial relics, but extremely important organs constituting local defences, and bearing a large share in the production of "immunity." The subepithelial members are situated at various points in the alimentary canal in zones which have been referred to as vulnerable spots. The glands forming Peyer's patches, and even the appendix vermiformis, are examples of these defences. These glands are composed of nodules, the lymph follicles, consisting of a network of adenoid tissue in which are embedded large and small lymph cells identical with the leucocytes in the blood. Both varieties are powerfully phagocytic, but the smaller type is far more numerous; its members pass into the blood directly and also through the efferent lymph vessels, and constitute 20 per cent. of the total white blood cells.

The subepithelial masses of adenoid tissue lie so close to the surface that lymph cells and epithelial cells are intermingled. Though scarcely represented in fœtal life they reach their highest development and are functionally most active in the early years of childhood, when immunity is acquired against the exanthemata and other infectious diseases. The facts that lymphocytosis occurs most frequently during childhood and that lymphocytes form a relatively larger portion of the blood in very young children are thus explained. Numerous important investigations have been made with reference to the function of these glands by Watney, Ranshoff, Ruffer, Flemming, and Digby,[16] amongst others, and the phagocytic action of the lymph cells, which goes on freely not only in the interior of the glands but on the surface, must be regarded as conclusively proved.

Inflammatory enlargement of the subepithelial glands, with consequent lymphocytosis, is characteristic of a variety of diseases—e.g., tuberculosis, diphtheria, malaria, mumps, rickets, syphilis, the exanthemata, and recurring colds; in the last case the glands affected are the pharyngeal and palatine tonsils. Consisting of a congeries of lymphocytes, held together by a supporting meshwork of retiform tissue, these tonsils become greatly enlarged when the throat and nose are invaded by the micro-organisms which occasion a cold. The first to suffer is the pharyngeal tonsil; repeated attacks render the enlargement permanent. The tonsil becomes fibrous and its defensive functions are thereby lessened. A more severe cold results in the destruction of many of the lymphocytes, and these, with the increased amount of mucus secreted, constitute the muco-purulent discharge of catarrh. A great number of micro-organisms have the property of causing symptoms of a cold. R. W. Allen [17] has identified five, but it is highly probable that besides these, and those others which cause the various exanthemata, many more produce catarrh.

Functions of the Nose.

Leaving out of consideration the olfactory, respiratory, vocal, and gustatory functions, also the drainage of the sinuses and ventilation of the Eustachian tubes, the principal nasal functions are to filter, warm, and moisten the air. According to StClair Thomson and R. T. Hewlett,[24] from 1500 to 14,000 organisms enter the nose during one hour's tranquil respiration.

The cilia sweep back the grosser particles, and the nasal mucous membrane has been said to be bactericidal; the expired air is sterile, but this alteration, in virtue of some ingenious experiments performed by Greville Macdonald and others, have proved this sterility to be due to conditions obtaining in the nose and naso-pharynx. It is obviously quite impossible that in health all the micro-organisms entering the nose are expelled by the ciliated epithelium or entangled in its bactericidal mucus. Diagrams have been made to show how the air in its passage through the nose arches upwards, backwards, and downwards. But for each and every individual micro-organism to come into contact with one or other of the walls of the nasal cavities and for none to pass through the nose without touching these walls during the short period of the time taken in the performance of even only one respiratory act, is manifestly impossible. Entering through the nostrils, the air impinges on the posterior naso-pharyngeal wall in the situation of the pharyngeal tonsil and is deflected into the larynx. The remarkable researches of Metchnikoff, which proved the function of the white blood cells to be not merely scavenging but also effectively bactericidal, should have led us to suspect the fate of the hordes of micro-organisms entering the body during respiration. Is it not remarkable that the stream of air entering through the nose first impinges on a group of surface defences? The sterilisation of the air is partly, perhaps mainly, performed by the naso-pharyngeal tonsils which are the first to suffer from enlargement, inflammation, and suppuration, the other members of the inner ring only becoming affected secondarily.

Presence of Micro-organisms in the Subepithelial Lymphatic Glands.

Digby [18] found the presence of bacteria easily demonstrable in the vermiform appendix of the rabbit, and quoted Ruffer and Butterfield who, working independently, found them present in large numbers in human tonsils. Mucus from the tonsils of four healthy (human) subjects was found by Ruffer to contain numbers of "leucocytes full of microbes."

It is highly probable that the small lymphocytes passing between the epithelial cells attack, kill, and absorb the micro-organisms present on the surface, and return with them to the interior of the gland from which they emerged. They are definitely phagocytic and motile. They originate from the same blastodermic layer as the digestive tract. General increase of lymphatic structures, particularly of the subepithelial variety, signifies prolonged bacterial assaults. The heart may be weakened by the presence of toxins in the blood, and therein lies the explanation and the cause of status lymphaticus.†

The overworked, chronically enlarged pharyngeal and palatine tonsils become a source of danger to the individual and may give rise to toxæmia. "That chronically enlarged tonsils or marked adenoids have lost their defensive powers, and come to resemble a choked filter, is shown by the greater frequency with which adenoid children contract diphtheria and scarlatina and by the severity of throat and ear complications in such cases" (Thomson).[19] And besides the remarkably prompt and beneficial results following operative removal of adenoids, it is a matter of almost daily observation to note the improvement in the complexion and health of patients suffering from naso-pharyngeal catarrh after a course of local treatment. The frequency with which appendicular troubles are relieved by similar throat treatment cannot be explained as coincidence. Pybus [20] mentioned the occurrence of appendicitis following throat affections in 1915, and Eustace Smith points out that in some specific fevers—e.g., scarlatina—it is found post mortem that all the subepithelial lymphatic glands are affected.

Examination of the blood reveals, as the phagocytosis or lymphocytosis would lead one to suspect, a degree of anæmia. There is also diminution of alkalinity—sometimes referred to as acidosis—due probably to respiratory obstruction occasioning increased production of carbon dioxide. Some of the mental and physical defects noticed have been explained by these changes in the blood. Many authorities [21] have commented upon the improvement after operation. Given anæmia, lack of muscular tone is inevitable, and the habit

† Ehrlich suggested that preliminary to phagocytosis the blood plasma played a part in virtue of alexin and the amboceptor, and Wright teaches that micro-organisms are first acted upon by a mysterious opsonin which prepares the way for the phagocytes. But the phagocytic action of the large and small glandular lymphocytes appears difficult to explain by either of these theories.

of lounging follows. The affected subject stands with the body-weight chiefly supported alternately, on one leg and on the other. The plantar muscles and ligaments participate in the general muscular flabbiness; therein lies the cause of flat-foot. Lateral curvature of the spine is due to the same habit of lounging. Standing with the weight mainly on one foot it will be observed that unless a compensating curve in the spine is introduced the whole body is thrown into a slanting position, one hip is raised higher than the other and the spine-bending, unconsciously performed to bring the head into a position over the middle line of the body, becomes a natural sequel. Catarrhal conditions extending into the larynx, trachea, or bronchi render themselves obvious by unmistakable symptoms. But the extension of these morbid processes into the stomach, bile-duct, and intestines, occurring far more frequently, is infinitely more insidious.

Hitherto the cause of rickets has in the main been held to be dietetic; some authorities on pediatrics hold that adenoids are also due to alimentary disturbances. It has also been pointed out that even if the two conditions are separate and distinct—about which there is at least an element of doubt—the gastric disturbances and defective assimilation held to be the causes of rickets may be due to the catarrhal condition of the mucous membrane lining the alimentary canal, rather than to starchy food. Catarrhal jaundice in adenoid subjects, particularly in those who suffer from attacks of asthma, is frequently observed. Catarrh of the stomach is obviously sufficient to account for dyspepsia, anorexia, morning sickness, and vomiting. Extension of catarrhal inflammation into the stomach and intestines accounts for many of the symptoms of adenoids and rickets, and has in my opinion a much more pernicious influence than that caused by the swallowing of infected mucus. Colyer [22] claims that: (1) micro-organisms developing in the adenoid area and directly infecting the alimentary tract, favour the production of intestinal toxæmia; (2) adenoids lead through lethargy and constipation to intestinal toxæmia.

Whilst I do not agree with the observer, mentioned by Colyer, who stated that 95 per cent. of all diseases result from intestinal toxæmia, the latter condition is certainly responsible for very many. An American writer drew attention to the frequency with which appendicitis follows adenoids; Watson-Williams [23] has quoted several cases of this sequence in his own practice, and I have also met with several examples. In one instance it was decided to operate on a boy aged 7, who, suffering from adenoids, suddenly developed an acute attack of appendicitis. In consultation it was agreed, as there seemed no fear of dangerous complications, to wait till the attack had subsided and then remove the appendix. The boy recovered; his parents declined to sanction the abdominal operation pending the development of further symptoms, so I removed the adenoids. It is now 12 years since this operation was performed; there has been no recurrence of the appendicitis and the patient has enjoyed good health ever since.

Conclusion.

To recapitulate: Here we have naso-pharyngeal catarrh extending into the alimentary canal and affecting both digestion and assimilation; exaggerated lymphocytosis and swollen lymph glands rapidly losing their protective influence owing to fibroid changes; the swallowing of large quantities of infected mucus, a drain on the system from the over-production of lymphocytes causing anæmia—to say nothing of the abnormal secretion of the connective-tissue element containing mucin and of the lessened alkalinity of the blood.

The chief cause, excluding the exanthemata, is the mainly disregarded frequently-recurring colds.

References.—1. Biaggi: Annal. des Mal. de l'Oreille, 1905. 2. Marfan: Quoted in B.M.J., 1908, i., Epitome of Current Medical Literature, p. 29. 3. Thomson, Sir StClair: Diseases of the Nose and Throat, second edition, 1919. 4. Ballenger: Diseases of the Nose, Throat, and Ear. 5. Tilley: Diseases of the Nose and Throat. 6. Ball: Diseases of the Nose. 7. Greville Macdonald: Diseases of the Nose. 8. Campbell, H.: Proc. Roy. Soc. Med., January, 1919. 9. Cautley: Ibid. 10. Pritchard: Ibid. 11. Biaggi: Loc. cit. 12. Marfan: Loc. cit. 13. Low, Stuart: Proc. Roy. Soc. Med., January, 1919. 14. Loc. cit. 15. Hutchison, R.: Lectures on Diseases of Children, 1918. 16. Digby: Immunity in Health. 17. Allen, R. W.: B.M.J., 1906, i., p. 1131. Epitome, B.M.J., February, 1908. 18. Digby: Loc. cit. 19. Thomson, Sir StClair: Diseases of the Nose and Throat, second edition, 1919. 20. Pybus, F. C.: Some Affections of the Tonsils, Hunterian Lecture, 1915. 21. Thomson: Diseases of Nose and Throat, 1919. Waterhouse: In Quain's Dictionary of Medicine, 1902, p. 1087. Lichtwitz and Sabrazes: Arch. Internat. de Laryngol., 1900. Rossier and Tissie, P.: Annal. des Mal. de l'Oreille, 1908. Mendel: Physiologie et Pathologie de la Respiration Nasale, 1897. Takabake: Arch. of Otol., February, 1905. 22. Proc. Roy. Soc. Med., January, 1919. 23. Nasal Sinus Infection as a Canal Factor in Appendicitis, Practitioner, April, 1921.

UNHEALTHY TONSILS AND CERVICAL ADENITIS.

BY WALTER G. HOWARTH, M.A., M.B. CAMB., F.R.C.S. ENG.,

SURGEON TO THE THROAT AND NOSE DEPARTMENT, ST. THOMAS'S HOSPITAL; LARYNGOLOGIST, CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, VICTORIA PARK;

AND

S. ROODHOUSE GLOYNE, M.D. LEEDS, D.P.H. LOND.,

PATHOLOGIST, CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, VICTORIA PARK.

THIS research was undertaken with a view to inquiring into the relationship, if any, which exists between enlargement of the palatine tonsils and cervical adenitis. It was hoped also that the work might throw some light on the more general question of the portals of entry of the tubercle bacillus. The importance of the tonsil as a channel of infection was emphasised by our colleague Dr. Hugh Walsham [1] and others many years ago. During the past 20 years much has been written on the subject, and an excellent summary with an extensive bibliography will be found in a recent article by C. V. Weller.[2] This author has collected published records of 4522 tonsils examined, with positive findings as regards tuberculosis in 3·1 per cent. of cases, which agree closely with the findings (2·35 per cent.) obtained by Weller himself in 8097 consecutive cases of tonsillectomy. On the more particular question of the possible relationship between enlarged tonsils and cervical adenitis less extensive inquiries have been made. Mitchell [3] published a series of cases during the war in which he found tuberculosis in 38 per cent. of tonsils removed from children and adults with enlarged cervical glands. Other workers [4] have made clinical and pathological notes of this association of the two conditions, but the exact proportion of tuberculous tonsils found still remains *sub judice*, the figures varying in different published series from 7 to 38 per cent. Is the palatine tonsil a common portal of entry for the tubercle bacillus, and are enlarged and unhealthy tonsils, therefore, generally tuberculous? Or does the tonsil, acting as a filter, become enlarged and unhealthy from septic absorption, and merely receive the tubercle bacillus from time to time as a secondary invader? These questions have an important bearing on both the pathology of tuberculosis and the surgical treatment of the unhealthy tonsils and cervical adenitis. On the pathological side questions are naturally raised, not only as to the portals of entry, but also as to the reaction of tissues to the tubercle bacillus; whilst on the clinical side the surgeon is required to decide whether the unhealthy tonsils or the enlarged glands, or both, should be removed.

Selection of cases for examination.—Only cases with both unhealthy tonsils and enlarged glands were included in this investigation. In some instances the tonsils were small and embedded, and in others large and prominent; similarly the glands were in some cases small, firm, and discrete, and in others soft and much enlarged. In a few cases the glands had already been treated for tuberculosis. A record was made in each case as to the possibility of infection from some other member of the family. The cases were all drawn from the laryngological departments of St. Thomas's and Victoria Park Hospitals.

Operation.—In all cases the tonsils were removed complete in their capsules, either by dissection or by the blunt guillotine method. The personal technique of these operations has been described by one of us (W. G. H.) elsewhere [5]; it is therefore unnecessary further to refer to it.

Laboratory examination.—Four methods of investigation were employed in each case: (1) Films of muco-pus from the crypts were stained by the usual

Ziehl-Neelsen method for acid-fast bacilli; (2) each tonsil was cut into two halves with a sterile knife and films made from the cut surfaces. These films were examined for acid-fast bacilli in the usual way; (3) one half of each tonsil was fixed, dehydrated, and embedded in paraffin. Sections were stained by (*a*) hæmatoxylin and eosin for histological structure, and (*b*) carbol-fuchsin and methylene-blue for acid-fast bacilli; (4) the other halves of the two tonsils were ground together in a mortar (with a little sterile sand added to facilitate disintegration), digested with 40 c.cm. of 1 per cent. antiformin for an hour to destroy secondary organisms, centrifuged and washed several times, and the resultant deposit inoculated subcutaneously into guinea-pigs.

Results of Examination.

One hundred cases were investigated. Unfortunately in five instances the animal test was omitted, and in one instance the crypts and cut surfaces were not examined. The histological section proved to be the most satisfactory method of examination; and it was considered important to prepare both acid-fast and hæmatoxylin and eosin sections in each case. In those instances where histological examination raised any questions of doubt, another series of sections was made. Space does not permit us to give a detailed record of the cases, but briefly stated the results obtained were as follows:—

1. Ninety-five cases showed no bacteriological evidence of tuberculosis.
2. Five cases (Nos. 30, 35, 53, 74, and 99) showed typical giant cell systems.
3. Two of these (Nos. 30 and 53) showed acid-fast bacilli morphologically identical with tubercle bacilli.
4. No positive findings were obtained either in films from crypts or cut surfaces, or from guinea-pig inoculations. Unfortunately, the deposit obtained from the tonsils of one of the two cases showing bacilli was not inoculated into guinea-pigs.
5. The histological lesions in the five positive cases were beneath the crypts of the tonsil, thereby corresponding to the "focal crypt" type of infection recorded by Weller.
6. No family history of tuberculosis was obtained in any of the five positive cases.
7. Incidentally it was noted that three cases (Nos. 40, 52, and 74) showed minute multiple abscesses of non-acid-fast bacteria. This question of the inter-relation of septic infection and the tubercle bacillus we regard as very important, and it will form the subject of our inquiry in another series of a hundred tonsils, upon the examination of which we are now engaged.

Conclusions.

1. Five per cent. of unhealthy tonsils associated with enlarged cervical glands were found to show histological lesions of tuberculosis (giant cell systems). Two per cent. contained morphologically typical tubercle bacilli. These results agree closely with those obtained by other workers in general routine examination of tonsils.

2. Failure to obtain any positive results when large quantities of tonsillar tissue were injected into guinea-pigs is difficult to explain. Considerable care was taken at the autopsies of these animals, and in each case naked-eye evidence was not considered sufficient. Films were always made from the splenic pulp, and from the site of inoculation or any other suspicious lesion which existed. Three explanations of this failure are possible: (1) the tubercle bacilli, being very few in number, were lost in the manipulations of centrifugation, &c.; (2) the lymphoid tissue had effectively dealt with invading tubercle bacilli; (3) the tubercle bacilli were of low virulence (? bovine).

3. Pending a more thorough inquiry now being carried out in a second series of cases, we would tentatively suggest that the chain of events in enlarged tonsils with cervical adenitis is as follows: (*a*) enlargement of tonsils from chronic septic absorption from crypts and unhealthy surfaces of tonsils, followed by (*b*) cervical adenitis due to toxæmia; and (*c*) implantation of tubercle bacilli on the already enlarged unhealthy tonsil, with (*d*) subsequent absorption of bacilli along the lymphatics from tonsil to cervical glands. This process is probably slow and insidious, and the infecting tubercle bacilli are few in number. And, of course, presumably not every enlarged tonsil goes on to stages (*c*) and (*d*).

Inasmuch as the march of infection is normally from the tonsil towards the cervical gland—as indicated by the anatomical researches of Wood,[6] Poirier,[7] and others—the correct surgical procedure would appear to be removal of the tonsil rather than of the cervical glands. Our clinical experience during the past few years further supports this view, so that we now look with disfavour on primary operations on the glands. If the tonsils are properly enucleated it will be found that in a large number of cases the glands tend to disappear; in some cases the operation on the tonsils may cause the glands to break down, in which case aspiration with a suitable syringe is all that is required, and the remainder of the gland undergoes absorption, but should a sinus persist one or two doses with X rays will usually suffice to produce a cure without any disfiguring scar.

References.

1. Walsham, H.: Trans. Path. Soc. Lond., 1898, xlix., 67; and Channels of Infection, 1903.
2. Weller, C. V.: Archiv. of Int. Med., 1921, xxvii., 631.
3. Mitchell, A. P.: Jour. of Path. and Bact., 1917, xxi., 248.
4. Carmichael, E. S.: Proc. Roy. Soc. Med., Dis. Child., Lond., 1909–10, iii., 27; Latham, A.: THE LANCET, 1900, ii., 1785; Judd, E. S.: Ann. Surg., 1910, lii., 758; Dowd, C. M.: ibid., 1905, xlii., 49; Matthews, F. S.: ibid., 1910, lii., 753; Wood, P. B.: Jour. Am. Med. Assoc., 1905, xliv., 1425.
5. Howarth, W. G.: THE LANCET, 1916, ii., 600.
6. Wood, P. B.: Amer. Jour. of Med. Sc., 1905, cxxx., 216.
7. Poirier, P.: Lymphatics, English Trans. by Cecil Leaf.

A STUDY OF DYSENTERY IN THE FIELD.

WITH SPECIAL REFERENCE TO THE CYTOLOGY OF BACILLARY DYSENTERY AND ITS BEARING ON EARLY AND ACCURATE DIAGNOSIS.

BY JOHN ANDERSON, M.A., B.Sc., M.D., CH.B. GLASG.,

CHIEF ASSISTANT TO MISSION OF LONDON SCHOOL OF TROPICAL MEDICINE TO BRITISH GUIANA.

Introductory.

HAVING been attached to a casualty clearing station which landed on Suvla Bay at the beginning of August, 1915, and remained there till the evacuation in December of the same year, I had an opportunity of studying dysentery from the clinical point of view during its period of maximum prevalence, at a time when the morbidity rate from this disease had a very critical bearing on the military situation. The clearing station was afterwards moved to Egypt, and during the three succeeding years had to deal with troops which included always a residue of the Gallipoli force together with reinforcements which were continually arriving from temperate as well as tropical climates. In this way I was enabled to collect material and make notes during three subsequent dysentery epidemics—namely, those of the autumn of 1916 on the Suez Canal, of 1917 in the Sinai desert, and during 1918 in various parts of Palestine.

This paper therefore embodies the results of work during my four years' experience of dysentery in the field. Observations during the first two years were necessarily confined to clinical and statistical phenomena. In 1917 a laboratory was attached to the casualty clearing station and from that time pathological records were always available. Special attention has been given to the subject of early diagnosis based upon the cytological examination of the cellular exudate.

STATISTICS.

The importance of the disease under discussion, in its relation to military operations, is shown by the figures (Table I.) collected from the returns of the casualty clearing station on Suvla Bay in 1915.

While the Imperial Forces were being concentrated in Egypt, that is, during the comparatively quiescent period from January to December, 1916, I was

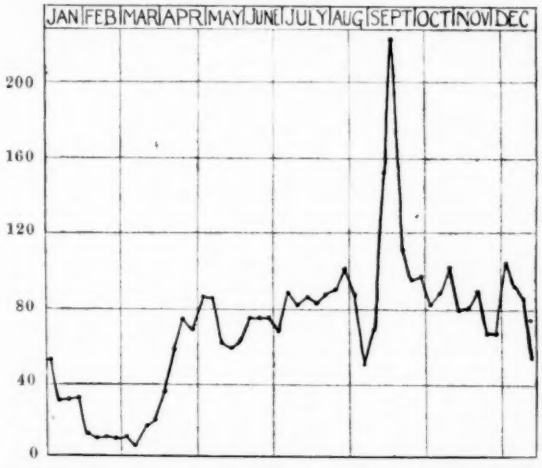
TABLE I.

(A) Periods of four days.
(B) Wounds—bullet, shrapnel, accidental.
(C) Intestinal diseases—" dysentery," " enteritis," &c.
(D) Other diseases.

(A)	(B)	(C)	(D)	Total	(A)	(B)	(C)	(D)	Total.
Aug.					Sept.				
14–17, inc.	181	101	98	380	15–18.	61	202	198	461
18–21. inc.	649	160	68	877	19–22.	54	233	179	466
22–25.	514	236	179	929	23–26.	37	201	151	389
26–29.	271	384	240	895	27–30.	98	242	195	535
30–					Oct.				
Sept. 2.	227	436	239	902	1–4.	37	143	144	324
Sept.					5–8.	35	95	95	225
3–6.	111	321	230	662	9–12.	29	108	112	249
7–10	96	193	149	438	Totals, 60 days.	2466	3224	2447	8137
11–14.	66	169	170	405					
					Per cent.	30	40	30	100

afforded an opportunity for making a more comprehensive epidemiological survey of the disease and the accompanying chart (Chart 1), though limited in scope, may be taken as typical. By this time pathological laboratories had been established in the most important centres, such as Cairo, Alexandria and Port Said, and the figures quoted are all supported by bacteriological data.

CHART 1.—*Incidence of Dysentery in 1916. Weekly Rate per 100,000 Strength.*



The first quarter of 1917 was a period of rapid military progress, and the climatic conditions under which the main body of the army lived were almost ideal from a hygienic point of view. Food was excellent; flies were se dom seen; there was no call for exhaustive work on the score of military necessity; intestinal disease had practically disappeared. At the end of the spring a very strenuous campaign was initiated in front of Gaza. The weather became uncomfortably hot; the forces were physically exhausted; the water s pply was a matter of difficulty and flies began to abound. During the period of active operations the casualty clearing station was flooded with surgical cases, but towards the end of April the admissions were practically all medical cases, of which intestinal conditions accounted for the great majority. A field laboratory was by this time attached to the clearing station, and during the period April 25th to May 8th 479 diarrhœic cases were examined bacteriologically, with the following resultant diagnoses:—

Amœbic dysentery	8
Bacillary dysentery (bacilli proven) ..	55
Lambliasis	1
Acute diarrhœa	415
Total	479

The bacillary findings again were subdivided as follows:—

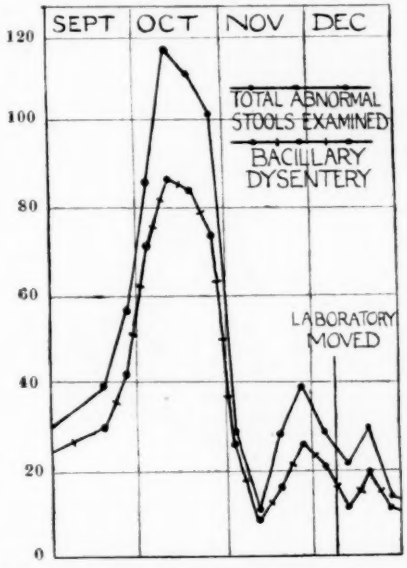
No. in which organisms isolated were	B. Shiga ..	31
	B. Flexner Y ..	6
	Not specified ..	18
	Total	55

Taking only the true dysenteries found in this series—namely, amœbic 8, bacillary 55—the relative proportion would be: amœbic dysentery, 12·7 per cent., bacillary dysentery, 87·3 per cent., a result which approximates the percentage recorded as the average for all the laboratories in the previous year.

Creditable as these results are, considering the difficulties under which the work was performed, they do not fully represent the true position. Dysentery bacilli were isolated from only a small proportion of the specimens submitted for examination, and amongst the 415 cases diagnosed as " acute diarrhœa " there must have been a large proportion of bacillary infections.

From the middle of May till the middle of August, 1917, the troops had a period of comparative rest,

CHART 2.—*Dysentery: Epidemic Rise in 1917. Figures per Week from One Casualty Clearing Station.*



and as the great heat militated against the spread of flies, there was very little sickness of an intestinal nature. The usual autumnal rise in dysentery commenced about the end of August and reached its maximum in mid-October (see Chart 2). During this period, No. 3 Military Laboratory (officer commanding, Captain P. Manson-Bahr, R.A.M.C.) was attached to the casualty clearing station, and I had the privilege of combining bacteriological investigation with the clinical work in the hospital marquees.

A careful study of this autumnal rise in the dysentery rate afforded some significant statistics, and these have been summarised in Table II., covering the period of highest incidence, that is, during the six weeks ending Nov. 3rd.

TABLE II.—*Figures during Period of Highest Incidence, Sept. 23rd to Nov. 3rd, 1917.*

Total No. of abnormal stools examined	501
Simple diarrhœa	95
Flagellate diarrhœa	16
Amœbic dysentery	5
Bacillary dysentery, provisional diagnosis ..	385
Cultured	194
B. Shiga isolated	56
B. Flexner Y isolated	60

A striking feature in Table II. is the marked preponderance of the bacillary as compared with the

amœbic variety. Taking the bacillary cases at the very minimum, that is, those in which Shiga's bacillus or the Flexner Y bacillus were isolated and gave the correct biological and agglutination tests, the numbers are :—

Bacillary dysentery	116, or 95·9 per cent.	
Amœbic dysentery	5 ,, 4·1 ,,	

If we take the bacillary figures at their maximum, that is, including all diagnosed from a microscopic examination of the cellular exudate provisionally as bacillary dysentery, then the numbers are :—

Bacillary dysentery	385, or 98·7 per cent.	
Amœbic dysentery	5 ,, 1·3 ,,	

Either of these findings can be taken as a significant indication of the relative importance of the two main types of dysentery in the field.

In 1918 the troops had advanced well into the hills of Palestine, where the water difficulties of the previous year were practically at an end, where the climatic variations were less suited to the rapid increase of flies, and where the conditions of life generally were less foreign to men from the Dominions or the United Kingdom. The result was, that from a military point of view, dysentery became a disease of secondary importance and at no period of the year did it acquire the significance of an epidemic. For the greater part of the year I remained attached to No. 3 Military Laboratory, which had moved up with the advancing troops, and the total examinations of fæcal specimens for the 12 months did not exceed 2000.

In the late summer and autumn a widespread malarial infection threw a heavy strain upon all the laboratories, and little time could be spared for the culture of fæces, so that dysentery statistics are not as complete and telling as they were in the previous years of the war. Out of 2000 examinations the cases diagnosed as true "dysentery" numbered 708. Of these only 80, or 11·3 per cent., were diagnosed as amœbic, and 628, or 88·7 per cent., as "probably bacillary." A certain number of the latter were cultured and in a small proportion B. Shiga and B. Flexner Y were definitely isolated.

Note.—Under the heading of B. Flexner Y I have included the classical mannite-fermenting bacilli. The slight differences between the original Flexner[1] strain and the Y bacillus of Hiss[2] and Russel are so evanescent that for all practical purposes they can be disregarded. Both are agglutinated in moderate dilution by the specific sera issued by the Lister Institute.

CYTOLOGY.

The special investigation regarding the cytology of the stools of bacillary dysentery, with a view to establishing a differential diagnosis as near the front line as possible, was carried out chiefly during the period of highest incidence in 1917. At that time the casualty clearing station with the adjacent laboratory was situated about ten miles behind the active troops, and patients were usually under observation within from one to three days after the commencement of their illness. The rule was that every patient admitted with diarrhœic symptoms was allotted a clean bedpan, and his first stool after admission was immediately taken down to the laboratory, where the microscopical examination of the fresh specimen was carried out often within 15 minutes of defæcation. A likely piece of the stool was selected and transferred by means of a platinum loop from the bedpan to a clean slide. A cover-glass was then superimposed and gently pressed down so as to give an even transparent film of a thickness sufficient to allow the free movement of any contained entamœbæ.

Classification of Cells.

The microscopic picture in an early case of dysentery is always a striking one, on account of the typical cellular exudate presented, and it is perhaps convenient to describe here the differential features of the characteristic cells and organisms found therein.

1. *Cells derived from the gut wall* :—(*a*) *Squamous epithelial cells.*—These are derived from the margin of the anus, are usually of horseshoe shape, and have the characteristic large oval nuclei.

(*b*) *Columnar epithelial cells.*—These are derived from the inner coating of the intestinal wall, are usually isolated, but are sometimes found in orderly clumps. Owing to osmotic pressure in the liquid stool they are often pear-shaped and the rounded nuclei are usually easily identified.

(*c*) *Endothelial cells* may be recognised in at least three distinct varieties. (i.) *Plasma cells.*—These are larger than mononuclear leucocytes and are oval in shape. The protoplasm is not refractile and there is a large oval nucleus usually ex-centrically placed. (ii.) *Macrophage cells.*—These are derived probably from the endothelial lining of capillary walls, vascular as well as lymphatic. They are polygonal when in clumps but usually are isolated and of rounded shape. In size they are generally larger than any other cells in the stool, measuring 15–30 μ in diameter, or even more, and have a large well-defined nucleus of reticular structure and ex-centric in position. The cytoplasm is not refractile but is often vacuolated and may contain red blood corpuscles, leucocytes, and lymphocytes—that is, they are phagocytic. Their exact appearance is dependent to some extent upon the degree of osmosis which has taken place. The size and shape of these cells and the presence of included particles sometimes render it a difficult matter to differentiate them from entamœbæ, but the motility and refractility of the latter are usually conclusive, and in the living state there should be no great difficulty. (iii.) *Irritation or tissue mast cells.*—These are irregular in shape and about the size of a leucocyte. The nucleus is ill-defined and the protoplasm coarsely granular. It is difficult to differentiate these cells from eosinophiles until they are stained.

2. *Cells derived from the blood.*—There are usually large numbers of red blood corpuscles in all varieties of acute dysenteric stools. The white cells are classified according to the nomenclature used in most text-books :—(*a*) Polymorphonuclear leucocytes ; (*b*) large mononuclear leucocytes ; (*c*) small lymphocytes ; and (*d*) eosinophile leucocytes.

3. *Pathogenic entamœbæ.*—The *Entamœba histolytica* is now accepted as the sole causal agent in amœbic dysentery, and while different phases in its life history, such as encysted or tetragena forms and minuta forms are occasionally met with in stools that appear normal, the vegetative or active entamœba is present in all acute cases of the amœbic type.

The Cellular Exudate in Bacillary Dysentery.

The exact degree of reliance which may be placed upon a diagnosis of bacillary dysentery made from a preliminary examination of the cellular exudate has for some years been a controversial point, but the experience of the epidemics during the war has, I think, definitely proved its value.[1] When a film of the blood-stained muco-pus from the scanty gelatinous stool is placed under the microscope, the most striking feature is the abundance of cells, and the scarcity or absence of digestive débris. The cells found consist of varying proportions of the following types :—

(*a*) *Polymorphonuclear leucocytes.*—These form the majority of the cells in all stages of the disease. They may have the normal fresh appearance of healthy leucocytes, but more frequently they are swollen and altered in a characteristic manner. The cytoplasm undergoes a fatty degeneration, the nuclei become distended and ghost-like, and the cell dies *en masse*. This appearance is very different from that found in amœbic dysentery, where the leucocytes seem to undergo a digestive process and become progressively reduced in size owing to a marginal disintegration.

(*b*) *Other blood cells.*—The red blood corpuscles vary considerably in number according to the stage and the degree of acuteness of the attack. In subacute or chronic cases, where the stool is composed largely of mucus, there may be an entire absence of red cells in the field, whereas in amœbic dysentery they are present in nearly all cases.

Lymphocytes and large mononuclear leucocytes are present in insignificant proportions, while eosinophiles are very seldom seen.

(*c*) *Macrophages. Endothelial cells.*—These cells form a small proportion of the total exudate, but their size and characteristic appearance mark them out for special attention. Like the polymorphs, they are found in various stages of degeneration, the cytoplasm becoming granular, vacuolated, and then hyaline ; the nuclei becoming granular, distended, and finally broken up and scattered as irregular fragments throughout the cytoplasm.

(*d*) *Epithelial cells.*—Either columnar or squamous. In the early inflammatory stage of the disease, there may be very few of these cells, but in the later desquamative phase they are found often in large numbers.

(*e*) *Plasma cells and irritation cells.*—Present in small variable proportions, depending apparently on the depth to which any ulceration of the gut wall has taken place.

[1] Willmore and Shearman, THE LANCET, 1918, ii., pp. 200–208.

Cellular Exudate in Amœbic Dysentery.

The differential diagnosis of the two main types of dysentery would seem to present little difficulty if one is dealing with ordinary uncomplicated cases; the microscopic examination in a fresh specimen presents a very different picture from the one just described. The most striking feature here is the scantiness of the cellular exudate unless, as is sometimes found, the specimen consists of almost pure blood from ulceration through the wall of a vessel. With regard to the cells that are present, those consist of:—

(*a*) *Polymorph leucocytes.*—These are rarely seen in their normal condition. A proteolytic process is obviously at work, and they are usually partially ingested, giving them a "mouse-eaten" appearance. The process commences at the periphery of the cytoplasm and progresses until only remnants of the nuclei remain scattered throughout the film—a very different picture from that in the bacillary type where the leucocytes die by a massive toxic necrosis.

(*b*) *Other blood cells.*—These also exhibit differences that are equally striking. The lymphocytes are relatively increased in number and have the same degenerated appearance, while the eosinophiles are markedly increased. The prevalence of eosinophiles is so noticeable that it might almost be regarded as a pathognomonic sign of the presence of entamœbæ.

The red blood corpuscles also show a remarkable phenomenon. In bacillary dysentery the red cells are isolated as in diluted normal blood, but in the amœbic type they are generally clumped together in small groups of from two to eight, suggesting some agglutinative effect. This phenomenon, so far, does not appear to have been mentioned by other observers.

(*c*) *Macrophage cells.*—Very rare in uncomplicated cases of amœbic origin.

(*d*) *Epithelial cells.*—Usually present together with plasma cells, but there is nothing to distinguish them from those found in the desquamation of bacillary origin.

(*e*) The vegetative *Entamœba histolytica* or its encysted form. This clinches the diagnosis of amœbic dysentery, but where that organism cannot be found—and Wenyon[3] has pointed out that the chances of not finding it are considerable—then in a case presenting a pathological picture such as has just been described one is justified in reporting it as "probably amœbic dysentery."

The recognition of the outstanding features of the cellular exudate, and their great importance as a factor in the rapid diagnosis and early treatment of two diseases differing so widely as regards their pathology and therapeutic requirements, naturally calls for a closer investigation of this field. With that object in view I arranged to make careful observations in a series of suitable cases admitted to hospital during the epidemic rise of 1917.

In each case clinical notes were taken on admission and the first stool was carried at once to the laboratory, where the fresh specimen was examined macroscopically as well as microscopically. In the absence of pathogenic entamœbæ, a provisional diagnosis of bacillary dysentery was made. Another film was prepared, fixed, and stained for a subsequent and more prolonged examination. In addition, a piece of muco-pus was spread for culture on a plate of MacConkey's medium, and the bacilli of dysentery subsequently recognised by the usual serological and biochemical tests. In carrying out the former tests, Garrow's agglutinometer[4] proved to be of great practical value.

Differential Count of the Cellular Exudate.

In each slide 500 cells were counted, and the table of figures (Table III.) gives the results in 15 cases of acute bacillary dysentery. The diagnosis in each case was established by the isolation of colonies which (*a*) gave the correct sugar reactions, and (*b*) showed agglutination in the appropriate serum. The first eight cases of the series have been arranged according to the stage of the disease; the last seven were taken in the order of admission. Other bacillary cases were counted, but as the results were all so uniform, it was considered that the 15 selected would be sufficient to give an average estimate.

In order to emphasise the significance of the figures in the differential diagnosis of bacillary dysentery, I have drawn out a contrast table (Table IV.) to show the average cellular content of an amœbic stool. Five cases were selected at random, in all of which the *Entamœba histolytica* was found in the active vegetative form, and in none of which were any dysentery bacilli recovered from cultures. The five cases are placed in the order of admission, and in this table a further column has been added to include the cells undergoing pyknosis. In each slide 500 cells were again counted, and a percentage struck.

TABLE III.—*Details of Cellular Exudate in Acute Bacillary Dysentery. Differential Counts.*

Case No.	Day of illness.	Type of bacillus isolated.	Per cent. polymorph leucocytes.	Large mononuclears.	Lymphocytes.	Eosinophiles.	Macrophages.	Epithelial cells.	Plasma cells.
1	1st	F.Y.	93·6	1·0	2·2	—	1·2	0·8	1·2
2	2nd	S.	90·2	0·4	3·2	—	2·0	0·8	3·4
3	3rd	F.Y.	87·8	1·2	2·8	—	1·8	4·2	2·2
4	4th	S.	94·2	0·6	2·4	—	1·0	0·8	1·0
5	5th	F.Y.	94·2	0·6	2·6	—	1·6	0·6	0·4
6	6th	S.	85·4	2·2	1·4	—	6·4	3·8	0·8
7	7th	S.	87·6	6·2	3·2	—	1·2	0·8	1·0
8	8th	S.	89·8	4·0	3·4	—	1·0	1·4	0·4
9	—	S.	92·0	1·8	3·2	—	1·4	0·2	1·4
10	—	S.	91·6	0·6	2·0	—	1·6	1·4	2·8
11	—	S.	90·4	0·6	3·8	—	1·6	1·2	2·4
12	—	F.Y.	87·4	1·6	3·2	—	2·2	2·4	3·2
13	—	F.Y.	91·6	0·8	2·4	—	1·2	2·0	2·0
14	—	F.Y.	91·4	0·8	3·6	0·2	1·4	1·4	1·2
15	—	S.	93·2	1·8	2·6	—	1·2	0·4	0·8
	Average ..		90·69	1·61	2·80	0·01	1·80	1·48	1·61

F.Y., Flexner Y. S., Shiga.

TABLE IV.—*Details of Cellular Exudate in Acute Amœbic Dysentery. Differential Counts.*

Case No.	Per cent. polymorph leucocytes.	Large mononuclears.	Lymphocytes.	Eosinophiles.	Epithelial cells.	Plasma cells.	Pyknotic cells.
1	5·6	0·8	3·4	2·4	2·0	3·4	82·4
2	4·8	1·0	2·2	4·4	2·2	2·4	83·0
3	5·6	0·2	1·8	2·4	1·4	1·6	87·0
4	10·8	0·6	2·4	2·0	0·8	0·8	82·6
5	10·6	0·8	2·6	4·8	0·2	0·8	80·2
Average	7·5	0·7	2·5	3·2	1·3	1·8	83·0

In each case the organism found was active *E. histolytica*. Macrophages, no result.

A comparison of Tables III. and IV. brings out the following salient features:—

Bacillary Dysentery.

1. The preponderance of polymorph leucocytes, which constitute on an average 90 per cent. of the total cellular exudate.
2. Eosinophile cells were seldom or never present.
3. Macrophages were present in limited numbers, averaging about 2 per cent., but their size renders them very conspicuous.
4. "Pyknotic" bodies were not found in any of the 15 cases under review.

Amœbic Dysentery.

1. The small proportion of polymorph leucocytes, the average content being only 7½ per cent.
2. The presence of eosinophiles is a conspicuous feature, the number varying from 2 per cent. to nearly 5 per cent.
3. Macrophages were not found in any of the five cases of this series.
4. "Pyknotic" cell remnants were present in all cases, their average number reaching the very high proportion of 83 per cent.

Essentials of the Problem.

After studying the effect of varying conditions on the fæcal constituents in a number of cases I am of opinion that the whole problem can be narrowed down to an examination of two points: (1) the proximity of the laboratory to the active troops: (2) the freshness of the fæcal specimen.

1. If a laboratory is situated at the base, and, as not infrequently happens, cases do not reach the base hospital until their tenth or twelfth day of illness,

the bacteriological records must differ very widely from those of a laboratory behind the front line where specimens can be examined possibly on the same day as the man first appears on "sick parade." It has been stated that bacillary dysentery is a self-limiting disease, and whether treatment has been rigidly carried out or not, the clinical and microscopical picture has generally undergone fundamental changes in 10 or 12 days. On the other hand, amœbiasis, unless specifically treated, is notoriously chronic and progressive. The onset is slow and insidious, and for the first few days an examination of the stool in an advanced laboratory may reveal nothing definite. By the time the patient reaches the base, if no emetine has been administered in the meantime, the symptoms are usually well marked, and the pathogenic amœbæ are found without much difficulty. It is not surprising therefore to find variations in the records of different laboratories.

2. The freshness of the fæcal specimen bears a very close relationship to the proportion of positive bacteriological findings compared with the total number of stools examined. Ceteris paribus, the percentage of positive findings reaches its maximum when the laboratory is attached to an advanced field unit, and the bacteriologist can select his specimen directly from the bedpan within half an hour after the stool has been passed.

In order to determine the rate at which dysenteric bacilli disappear from the fæcal specimen, I carried out a series of experiments with some typical stools, and came to the conclusion it was rarely possible to recover, by cultural methods, the specific bacilli from a motion that had been passed eight hours previously.

The practical side of this question may be demonstrated by a few figures taken from the returns of the laboratory with which I was connected in 1918. Here the specimens were sent in from various medical units, most of which were situated at some distance away. Portions of the stools were placed in fæces tubes, and sent to the laboratory by post or by messenger, and frequently an interval of from six to 24 hours had elapsed before the examination was made. Out of 900 specimens examined by culture during the year, only 75, or 8·3 per cent., gave definitely positive results. Of these 75, organisms of B. Shiga type were isolated in 58 cases, and B. Flexner Y in the remaining 17. The results should be compared with the findings of the laboratory during the autumnal incidence of dysentery in 1917 (vide Table). During that period the conditions for successful culture were ideal, because the bacteriological camp was adjacent to the casualty clearing station and bedpan specimens were carried to the laboratory immediately they were passed. Out of 194 specimens cultured under such conditions, 116, or 60 per cent., gave positive results. Of that number, 56 were of B. Shiga type and the remaining 60 were B. Flexner Y.

SUMMARY AND CONCLUSION.

In conclusion, as the result of personal experience of epidemics of dysentery in the field, I would lay emphasis on the following points:—

1. The clinician and the pathologist should be as constantly associated as the surgeon and the anæsthetist.

2. The laboratory should be in close proximity to the source of material.

3. Considering the vicissitudes which surround the isolation of specific dysentery bacilli, much more stress should be laid on a diagnosis founded upon the characteristic cellular exudate. The most important factor in the treatment of acute dysenteric conditions is time, and as a provisional diagnosis by this method can be made at least 24 hours before the bacteriological report is ready, the advantage to the patient is incalculable.

References.—1. Flexner: B. M. J., 1901, i., p. 786. 2. Hiss: Jour. Med. Res., xiii., 1904, No. 1, p. 1. 3. Wenyon and O'Connor: Human Intestinal Protozoa in the Near East, 1917. 4. Garrow: THE LANCET, 1917, i., p. 262.

AN UNUSUAL CASE OF INJURY TO THE PETROUS BONE.

BY H. LAWSON WHALE, M.D., F.R.C.S. ENG.,
OTOLOGIST TO THE HAMPSTEAD GENERAL AND TO THE LONDON TEMPERANCE HOSPITALS.

THIS case has not hitherto been reported because it seemed better, in view of the remarkable history, to await the subsequent issue before comment.

Lieut. R. D. C., aged 27, was wounded at Loos in March, 1915. A piece of shrapnel traversed the right cheek, nasal cavities, and both maxillary antra; en route it destroyed the right eye. It was recognised that the shrapnel had lodged in the depth of the petrous bone; but here it caused no local symptoms. And so, although the patient underwent several beneficial nasal and plastic facial operations, the missile had designedly been left undisturbed. On Nov. 11th, 1919, he contracted influenza, very soon complicated by left otitis media. On Dec. 15th he was urgently driven 30 miles to London, and staggered in, very ill, to my consulting-room. Mastoid tenderness and œdema, headache, and mild pyrexia presented an obvious picture of acute mastoiditis. A stereoscopic skiagram taken at once by Dr. N. S. Finzi showed the foreign body 1 in. deep to the skin surface on the same horizontal line as the mastoid antrum, and ¾ in. anterior to it, ⅝ in. superior to the external auditory meatus and the temporo-maxillary joint, and about equidistant from both, evidently lodged in the body of the petrous bone. As regards otorrhœa, the history was that this had now ceased for five days, and that previous to its cessation the discharge had been of a rusty colour, containing a few minute black specks which might have been metallic.

Operation.—An operation was performed next morning, Dec. 16th, Dr. D. H. Fraser anæsthetising. The mastoid antrum and cells were full of pus. Bony necrosis extended so far downwards to the mastoid apex and forwards above the ear that the ordinary post-aural incision had to be prolonged down to the digastric fossa behind and anterior to the pinna in front. The outer attic wall was found to be diseased and was resected; also a small part of the body of the petrous bone immediately superior to the external semicircular canal. There was now a large horseshoe-shaped cavity extending from the digastric fossa behind to within ½ in. of the posterior zygomatic root in front; and since the tegmen antri, the posterior wall of the mastoid process, and part of the tegmen tympani had been resected during the operation, the greater part of this large cavity was bounded peripherally by dura mater. The lateral sinus was evidently healthy. By careful search no fistula could be found which might reveal the position of the shrapnel. At this stage the stereoscopic skiagram was again investigated; bone was then cautiously gouged away from the petrous. The shrapnel was found, as nearly as could be surmised, in the concavity of the superior semicircular canal. After its removal projecting spicules of bone were curetted away in various situations and the cavity drained as for a cortical mastoid operation. Throughout the whole procedure the membrana and the region including the annulus tympanicus had been left untouched, and the posterior bony meatal wall cut away only at the top sufficiently to give free drainage to the attic region, as in a "modified" radical mastoid.

Convalescence was slow but uncomplicated. Eight weeks later a meatal flap was cut and turned back into the cavity; this was henceforth drained by the meatus, the post-aural wound being sutured. After another three weeks the patient went to Eastbourne in charge of a nurse. In May, 1920, five months after the first operation, he was playing golf. On his pre-war handicap of 8 he finished, in a bogey competition at Ashdown Forest, all square with bogey, winning the second prize. Golfers will note that he had only one eye, the left. Since that time his health has been in all respects normal. The epithelialised mastoid cavity has always remained quite dry, the membrane healed, and the cosmetic result perfect. And, with the right (sound) ear excluded by a noise-apparatus, he hears a whisper with the left (injured) ear at a distance of 30 feet.

SOUTH-WESTERN POLYTECHNIC INSTITUTE.—A conversazione will be held on Friday, Nov. 18th, from 7–10 P.M., at the institute, Manresa-road, Chelsea, London, S.W. The lecture rooms, laboratories, studios, and workshops throughout the institute, together with the equipment and apparatus, will be open to inspection.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

Exhibition of Cases and Specimens.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 3rd, Prof. HENRY BRIGGS, the President, being in the chair.

Mr. A. E. MORTIMER WOOLF showed a specimen of Double-ruptured Interstitial Ectopic Pregnancy.

Dr. W. J. O'DONOVAN showed a

Gold-Button Contraceptor.

He said that a patient, aged 26, who had been married for 12 months had consulted him for pruritus vulvæ of six months' duration. There was no history of menorrhagia or severe dysmenorrhœa, but there was a slightly malodorous vaginal discharge. Vaginal examination revealed a hard foreign body across the cervix which Dr. O'Donovan had removed by a firm pull and now showed to the section. The patient said it had been inserted by a doctor in New York soon after her marriage for a fee of £20. The device consisted essentially of a cup-shaped gold button, which fits over the cervix with a stem of coiled gold wire the thickness of piano wire, which plugs the cervical canal, and two prolongations which spring apart and which in the uterus would extend up to the Fallopian internal ostia and by their springing apart would fix this appliance permanently in place. A central hole in the cup permits menstrual and other fluids to pass through. Dr. O'Donovan considered it unnecessary to dwell upon the dangers inherent in such an instrument, which would be appreciated by members of the section.

Gold button used as contraceptor. Half actual size.

Dr. A. E. GILES said that a patient had asked him to insert one of these pessaries as a contraceptive. On making inquiries from the makers he ascertained that they were sold at two guineas each and were advertised as the latest cure for sterility. Dr. Giles strongly deprecated the use of such an instrument for any purpose.—Dr. NORMAN HAIRE said that the instrument was really an abortifacient and in Germany was sold as such. Since the instrument was hollow, conception might occur; he had heard that abortions following its use were often septic. He considered the instrument very dangerous.

Dr. GORDON CRANSTOUN read a short communication on a case of

Cystic Adenoma of the Uterus.

Unfortunately, the specimen had been destroyed but microscopic sections were available. The patient was a nullipara, aged 45, with a two years' history of gradual enlargement of the abdomen and increasing dyspnœa. Menstruation had been regular until eight months before admission to hospital when it had ceased. A diagnosis of unilocular broad-ligament cyst was made, and Dr. J. Fairbairn operated on April 13th. On exposure the cyst wall was found adherent to the parietal peritoneum, omentum, and gut, and efforts to separate it resulted in rupture and the escape of large quantities of opaque brown fluid. On exploration of the pelvis the uterus was found to be enlarged and to contain what appeared to be several fibro-myomata, while the surrounding structures were adherent. Pan-hysterectomy was performed. The mass removed consisted of a uterus enlarged by the presence in its wall of three connected masses resembling fibro-myomata about the size of tangerines, of which one apparently arose from the left upper cornu of the uterus. It appeared to be interstitial and composed of uterine tissue, and presented an ovoid flattened surface to the abdomen forming a kind of plateau. The wall of the cyst was continuous with the edge of this plateau and the point at which a section was cut was composed of uterine tissue containing spaces filled with degenerated blood-clot similar to that covering the surface of the plateau. The degeneration and distension of the tumour, according to Dr. Cranstoun, might have started centrally, and the dilatation on the abdominal side caused by the lack of resistance, so that the upper part of the tumour had gradually stretched to form the wall of an immense cyst, which contained three or four gallons of fluid as well as altered blood-clot. The right tube and ovary and the left ovary were normal, also the left tube, the proximal end of which, however, appeared to be lost in the wall of the cyst. The patient recovered and is now well. Dr. Cranstoun said he had shown the sections because this type of tumour was apparently very rare. Cystic adeno-myomata of small size had been recorded, but this one occupied the whole abdomen.—Dr. J. FAIRBAIRN said that the material that came out of the cyst was dark and treacly and might have been a secretion from the glandular masses.—Mr. GORDON LEY agreed that the microscopic sections looked like those from an adeno-myoma.

Dr. R. L. MACKENZIE WALLIS read a paper on

Glycosuria in Pregnancy.

He said that he proposed to divide the cases of glycosuria in pregnancy into two groups: 1. Transient or intermittent glycosuria. 2. Severe glycosuria and diabetes mellitus. Most of his work had been concentrated on the first group. The investigation of cases comprised: (1) the detection and estimation of normal and abnormal amounts of sugar in the urine; (2) the variations in the blood sugar in normal non-pregnant women and in pregnant women; and (3) the application of the glucose tolerance test as a means of diagnosis.

Method of Estimating Normal Urinary Sugar.—The normal urinary sugar content was too small to be detected with the ordinary reagents, and, moreover, other substances present in the urine might possess a reducing substance of their own and at the same time interfere with the reducing powers of the sugar present. Dr. Wallis said that after a long search he had found a means of removing these substances without interfering with the sugar present and proceeded to describe the following method which had been perfected with the help of Dr. P. J. Bose:—

The urine is collected at hourly or two-hourly intervals, and the estimation carried out as soon as possible after collection. If this is impossible toluol is added to the urine as a preservative, and in this way the urinary sugar keeps for a considerable time. One c.cm. of the urine is precipitated by 2 c.cm. of the phospho-tungstic reagent made up to contain 2 per cent. P.T.A. in 5 per cent. sulphuric acid. A dense pigmented precipitate appears and the mixture is now thoroughly shaken. The whole is made up to 10 c.cm. by adding 7 c.cm. of distilled water, shaken, and filtered. The filtrate is of a clear watery colour, and is found to be free from creatinin, pigments, and all substances likely to interfere with the detection and estimation of sugar. One c.cm. of this clear filtrate is heated for six minutes in a boiling water bath with 2 c.cm. of an alkaline copper solution. At the end of this period the tube is taken out, and treated with a solution of phosphomolybdic acid. The presence of sugar is revealed by the appearance of a deep blue colour. In order to estimate the amount of sugar present in the urine the colour produced by the standard solution of glucose treated in a similar manner with that of the urine is compared in a good colorimeter.

Thus a large number of estimations had been made upon every variety of urine. So far a clear filtrate with the phospho-tungstic acid reagent had always been obtainable, no matter how deeply pigmented the urine might be. In comparing the results obtained on a large number of individuals, the constancy of the amount of sugar in normal urine was striking. It exceeded 1 g. a day on an ordinary mixed diet, and the percentage of sugar in the urine corresponded curiously closely with that regarded as normal in blood—viz., 0·08–0·1 per cent.

The Blood Sugar Content.—The estimation of the blood sugar had been made by the micro-chemical method described by Dr. Wallis and Dr. C. D. Gallagher in THE LANCET, 1920, ii., 784.

Glucose Tolerance Test.—Dr. Wallis said that the method of applying this test used by him was as follows:—

> A light meal was given in the early morning, which consisted of one egg and tea or coffee with no sugar; three hours later the urine was collected and the amount of normal urinary sugar and blood sugar estimated. 50 g. of glucose in 150–200 c.cm. of water were given, and the blood sugar was estimated again a quarter of an hour and half an hour after the sugar had been consumed, and the urine as well as the blood sugar was estimated one hour and two hours after.

Curves had been plotted of these results and the patients appeared to fall into four distinct groups besides the normal controls. There appeared, moreover, to be a correspondence between the curves of blood sugar and the nature of the disease causing the glycosuria. Dr. Wallis differentiated: (1) a thyroid pancreatic group; (2) severe glycosuria; (3) renal glycosuria; (4) hyperpituitary cases. A striking feature was that cases of glycosuria in pregnancy fell into the fourth group.

Hyperpituitarism in Pregnancy.—Dr. Wallis felt convinced that in the glucose tolerance test we had the best, and at present the only means of detecting minor degrees of hyperfunction of the pituitary body. He said that this explanation of transitory glycosuria in pregnancy would appear to be the most reasonable and that the results are certainly suggestive. Dr. Wallis referred to cases published by him in association with Dr. F. A. Roper (1912) and Dr. Geoffrey Evans (THE LANCET, 1921, vol. i., p. 70) of intermittent glycosuria of pregnancy, and said that both these cases showed many of the characteristic signs and symptoms of hyperpituitarism. In acromegaly the signs of hyperpituitarism were so marked that there was little difficulty in diagnosis, but in milder cases the glucose tolerance test seemed to Dr. Wallis the only one available. Acromegaly was often accompanied by glycosuria in the early stages, often transient in character and frequently occurring without relation to diet; polyuria was frequently exhibited by these cases and extreme lassitude. In pregnant women intermittent glycosuria unaffected by diet, associated with normal or only slightly raised blood sugar, also occurred. Dr. Wallis spoke of the changes in the pituitary body during pregnancy and advanced arguments in favour of his contention that certain signs and symptoms exhibited by pregnant women could be attributed to excessive functioning of the pituitary body. He showed glucose tolerance curves illustrating the resemblance between known cases of hyperpituitarism and intermittent glycosuria in pregnant patients. The outcome of his investigation was that these cases were best left alone. They were able to tolerate 50 g. of glucose without the passage of abnormal amounts of sugar in the urine, and restriction of carbohydrates in their diets was unnecessary and might be harmful.

Severe Glycosuria in Pregnancy.—Every case of glycosuria in pregnancy should be regarded as a potential case of diabetes mellitus until proved otherwise. The presence of lactose should be excluded; if the fasting blood sugar showed a value over 0·2 g. per cent. of glucose there was evidence of gross disturbance of carbohydrate metabolism. Dr. Wallis quoted cases illustrating the value of blood-sugar estimations in glycosuria of pregnancy. The glucose tolerance test was not yet available as a means of prognosis, insufficient data having been collected.

Discussion.

Sir WILLIAM WILLCOX asked Dr. Wallis whether he had considered the thyroid gland in connexion with the glycosuria of pregnancy. This gland was known to vary in size with changes in the genital organs, and, in Sir William Willcox's opinion, was probably a factor to be considered. As to the severer cases showing evidence of diabetes mellitus, Sir William Willcox discussed the importance of acidosis as shown by the presence of acetone and diacetic acid in the urine. Acidosis might be present apart from diabetes—as in pernicious vomiting. Sir William Willcox asked whether diabetic patients were as susceptible as normal patients to acidosis. The conditions under which pregnancy should be allowed to continue were of importance. In America, apparently, patients suffering from severe forms of diabetes were allowed to go to term on special diets, but in Sir William Willcox's experience where there was low carbohydrate tolerance, such as 10 g. or 20 g. it was unwise to allow the pregnancy to continue.

Dr. P. J. CAMMIDGE said that Dr. Wallis's apparent assumption that dextrose was the only sugar, apart from lactose, to be found in the urine was contrary to his own experience. In looking through his cases, Dr. Cammidge had found that about 50 per cent. were passing dextrose, 22 per cent. lactose alone, and 24 per cent. lævulose. He had repeatedly been asked to see pregnant women said to be developing coma, in whom there was much sugar in the urine but the blood sugar was normal. Of the urinary sugar ½ g. or 1 g. proved to be dextrose and the rest lævulose. If these patients were made to fast they became ill and even comatose, whereas if given a full carbohydrate diet, with much toast, they improved rapidly. Dr. Cammidge had been converted to a belief in the value of dextrinised starch under these conditions, and quoted cases in which this treatment had proved successful. Only those cases showing dextrose in the urine benefited from starvation. Dr. Cammidge expressed himself unable to follow Dr. Wallis's classification. His own classification included a pancreatic group who improved with fasting and a hepatic group who became better when the liver was relieved by the decrease of proteins and increase of carbohydrates in the diet.

Dr. GEORGE GRAHAM differed from Dr. Wallis in his interpretation of the blood-sugar curves. The curves of cases described by Dr. Wallis as suffering from glycosuria of pregnancy resembled those shown by cases of mild diabetes. Dr. Graham considered that patients who showed glycosuria during pregnancy were comparable with those who showed glycosuria when attacked by carbuncles and with those recently described by Castellani in whom glycosuria was present only during a malarial attack. Any acute illness might lower the blood-sugar tolerance. Dr. Graham quoted a patient who had temporary glycosuria when suffering from impetigo. He deduced from these analogous conditions that the diminution of sugar tolerance arose from the extra strain put upon the metabolism by pregnancy. He was much interested in Dr. Cammidge's observations on the frequency of the appearance of lævulose.

Dr. HERBERT WILLIAMSON asked for an explanation of the association of glycosuria and hydramnios. He spoke of the occasional effect of maternal glycosuria on the infants, quoting a case in which he had been associated with Dr. Cammidge where the patient was delivered of three live children who died within a few hours of birth in a state of apparent coma.

Dr. CAMMIDGE mentioned that these children were abnormally large, a circumstance not unusual in cases of true maternal diabetes. The purely theoretical explanation that occurred to him was that these infants when in utero were accustomed to a medium of excessive sugar and could not adapt themselves to normal metabolic conditions after birth.

Dr. J. D. BARRIS asked Dr. Wallis what effect the administration of pituitary extract had on sugar tolerance.

Dr. WALLIS, in reply, said that the thyroid gland probably did play a part in the glycosuria of pregnancy since the actions of all the endocrine glands were balanced against one another. The cases investigated were those who showed dextrose. Dr. Wallis agreed with Dr. Cammidge that lævulosuria is connected with hepatic function. In his experience pancreatic glycosuria, as demonstrated by patients suffering from carcinoma of the head of the pancreas, was always fatal. In reply to Dr. Graham, Dr. Wallis objected

to the name of mild diabetes for cases who did best when left alone, as this name implied that they required treatment. To Dr. Williamson he pointed out that the pathology of hydramnios was still obscure. To Dr. Barris Dr. Wallis said that the effect of pituitary extract on sugar tolerance had not been established, but that adrenalin in repeated doses had a certain effect.

SECTION OF MEDICINE.

AT a meeting of this section of the Royal Society of Medicine held on Oct. 25th, Dr. G. NEWTON PITT, the President, being in the chair, Dr. W. W. PAYNE read a paper by Dr. E. P. POULTON and himself on

Epigastric Pain.

Experiments were detailed arising out of the work of one of the authors, in which it was shown[1] that distension was an important element in the pain of gastric ulcer, and that this pain could be abolished by reducing the intragastric pressure. The method adopted was to pass a Ryle's tube with a bulb on the end of it containing water and connected with a manometer outside the body. Alterations in the level of the manometer gave an indication of the contractions of the viscus in which the bag lay. It was found that pain experienced at the umbilicus and just above it was associated with contraction of the pyloric end of the stomach, the duodenum, or even the jejunum. The latter fact was discovered in a patient in whom pain had returned after performance of a gastro-jejunostomy for gastric ulcer. A feature of special interest particularly from the theoretical aspect was that pain high up in the epigastrium was associated with powerful contractions of the lower end of the œsophagus. The authors regarded this as due to abnormality in a special gastro-œsophageal anti-regurgitation reflex. Contrary to the generally accepted belief they held that activity of the lower end of the œsophagus and not merely contraction of the cardiac opening was responsible for stopping regurgitation from the stomach. The paper was illustrated by numerous diagrams.

Discussion.

Dr. R. HUTCHISON thought the authors could not account for all epigastric pain on this hypothesis. It was well known that a child suffering from congenital hypertrophic stenosis of the pylorus, with violent peristalsis visible through the abdominal wall, apparently suffered no pain. He thought there was also a possibility that the pain might cause a reflex contraction rather than the contraction cause the pain.—Dr. PARKES WEBER regarded the method as possibly useful in investigating cases of idiopathic dilatation of the œsophagus, so-called cardio-spasm.—Dr. T. STACEY WILSON remarked that Sherrington had shown that muscular tone was involved in keeping the intestine patent. When a peristaltic contraction reached a portion of the bowel thus tonically kept open, the opposing muscular actions gave rise to pain.

Dr. POULTON, in reply, said that the epigastrium was a large area, and he did not contend that all epigastric pain arose in the way that had been described. He agreed with Dr. Hutchison that the violent contractions in congenital hypertrophic stenosis were apparently painless.

LIVERPOOL MEDICAL INSTITUTION.

THE first ordinary meeting of the session took place on Oct. 27th, Dr. J. E. GEMMELL, the President, in the chair.

Mr. EDGAR STEVENSON read a note on the

Treatment of Septic Ulcer of the Cornea by Chauffage,

first described to him by Mr. Harrison Butler about 12 months ago. During this year Mr. Stevenson had treated a considerable number of septic ulcers of the cornea by this method with exceptionally good results, and he considered it far better than any other method of treatment. In addition to the rapid healing of the ulcer, an important point was that with chauffage the resulting scar was much thinner than that following healing by any other method.

Dr. G. F. R. SMITH read a note on Post-anæsthetic Complications.

Dr. DINGWALL FORDYCE read a paper on the

Significance and Treatment of Some Abnormalities of the Urine in Children.

He held that thorough examination of a child includes chemical and microscopical examination of the urine, which may disclose the presence of pus cells and motile bacilli. He said that these are never present in great numbers in a perfectly healthy child, but there are a considerable number of children, probably mainly girls, whose urine is in this condition and who are yet "fairly well." The bacilli belonged to one of the types of the "coli" group, and the exact site of the infection was impossible to determine in young children. Dr. Fordyce stated that the essence of both preventive and "therapeutic" treatment was correct diet and the avoidance or cure of septic foci. A common statement in the text-books was that sugar was rarely found in the urine in children, but in a recent series of 100 unpicked cases of ailing children, evidence of sugar in the urine was certainly present in 10. However slight and fleeting the positive test results may be, an explanation should be sought for them. In a large proportion of cases the presence of a positive test corresponded with indiscretion in diet or digestive disturbance and disappeared on its correction. In other cases a septic process was the cause.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this Society was held at the Royal Devon and Exeter Hospital on Oct. 20th, Dr. P. H. STIRK, the President, being in the chair.

Sir JAMES PURVES STEWART delivered an address on

Delirium.

Classifying his subject in the three divisions of acute delirium, non-febrile toxic delirium, and delirium in organic brain affections, he subdivided these forms of delirium, and then discussed their diagnosis, prognosis, and treatment.

In the discussion which followed, Dr. RICHARD EAGER—speaking from his experiences in mental hospitals—considered that acute delirious mania was a very rare condition, and that in the cases which had come under his notice there had been no high degree of pyrexia. Dr. Eager spoke of the value of Stoddart's treatment in this condition. He considered that "senile mania" was often influenced by traumatism, and that "exhaustion psychosis" was often wrongly classified as "delusional insanity." Dr. Eager advocated the early treatment of mental cases in special hospitals regarding certification as an objectionable procedure.—Dr. W. GORDON congratulated the lecturer on his classification of the subject. He also described a case of rabies and one of tuberculous meningitis with aphasia. Dr. Gordon discussed the "coloured nightmares" mentioned by Sir James Purves Stewart, and related his own visual impressions during the course of a severe infective illness.—Mr. NORMAN LOCK referred to so-called "catheter fever," and the question of a septic causation or an origin from bladder colic.—Dr. F. A. ROPER advocated a more extended use of hyoscine in delirium.

Sir J. PURVES STEWART, in his reply, agreed that hyoscine in repeated full doses had often proved of great value in the quieting of delirium.

Sir J. Purves Stewart was subsequently entertained at the Exeter and S.W. annual medical dinner, Mr. A. C. Roper, F.R.C.S., being in the chair.

[1] THE LANCET, 1921, i., 263.

Reviews and Notices of Books.

HEALTH OF THE INDUSTRIAL WORKER.

By EDGAR L. COLLIS, M.D., and MAJOR GREENWOOD, M.R.C.P. With an introduction by Sir GEORGE NEWMAN, K.C.B. London: J. and A. Churchill. 1921. Pp. 450. 30s.

IN their preface to this work the authors point out the lack of a book which deals at all adequately from the standpoint of hygiene with the profound changes in the lives of civilised people during the past century and a half consequent upon the rise and development of modern industry, and whilst disclaiming the possession of the erudition necessary for the task of writing such a book, refer to the experience in industrial hygiene which they individually possess. They express the belief that they "have made plain how great is the influence of employment upon general health, how many are the opportunities presented in industry for studying conditions which lead up to divergencies from health—divergencies which, when neglected, pass into disease, how ready to hand are means for improving the workaday life of the productive classes, and how important to the whole of preventive medicine are lessons learnt in the school of industrial hygiene." No one, after reading the book, will quarrel with such a belief. The importance of the whole matter is beyond question, and the authors' book should do much to advance its study. The introduction by Sir George Newman shows a broad minded and wide grasp of the subject matter.

Two chapters in Part I. deal with Industry and Health, and a Review of Industrial Legislation, and these are excellent. It is very desirable to clear away the misapprehension existing in the minds of so many that the position of industry is novel, and that the remedies suggested to cure its ills to-day are new. It should be made apparent that the industry of to-day is merely a link in a chain, and depends upon what has gone before, just as it must influence what may come after. In view of recent happenings it will scarcely be a matter for surprise, though it may be of regret, to learn that in the progress recorded the reasonable recommendations of important committees and Royal Commissions have been passed by unheeded, whilst attention has been paid to subjects pressed to the front by uneducated or biased voices. Chapters III. and IV. deal with the Utilisation of the Statistical Method in Industrial Preventive Medicine, and the Effect of Industrial Employment upon Health as Indicated by Vital Statistics. It will occur to some readers that these might well have been shortened, since the book is not suitable as a text-book for serious students of statistics, whilst in uninstructed hands statistical methods are likely to lead to error. While a briefer outline might have been sufficient, especially when, as the authors indicate, the book is addressed to the novice, familiarity with statistical procedure is now so necessary to workers in public health that there is much to be said for any inducements to its study.

Part II., dealing with Industrial Activity and Fatigue, Tuberculosis and Industry, Cancer, Accidents, and the Industrial Employment of Women will prove of value in facilitating that general dissemination of knowledge, existing indeed but to a large extent hidden away in Government publications. These are not inaccessible, but their study is apt to be a difficult matter, and many will be grateful to have a handy manual dealing with so new a subject as fatigue. It must not be forgotten, however, that much of the work still awaits confirmation and amplification, and that even the methods employed in arriving at present results have not been free from criticism. With psychological arguments also this is true, and they cannot be relied on as sure guides, though as indications they may be useful. We cannot altogether agree with the authors in their condemnation of common sense as a guide in administration (p. 204). In the absence of facts bearing directly upon the question in hand, common sense may prove an excellent guide, whilst to proceed in any course without it would be foolish. Indeed, we think that in one of the instances cited common sense would have suggested to anyone familiar with the workers' home life that women on night work would, if possible, engage in domestic duties during the day, and thus tire themselves unduly. It is common knowledge, if not common sense, that domestic claims must be uppermost in the minds of most women, and these will always sacrifice themselves in the interests of the home whenever the opportunity presents itself. Is it, therefore, correct to say that the existence of this "interfering social influence" "could not be determined without careful investigation?"

The authors are on sure ground in Part III., which deals with the Feeding of the Industrial Worker, Food at the Factory, the Use of Alcoholic Beverages by the Industrial Worker, Ventilation, Lighting, Washing and Sanitary Accommodation, Drinking Water, Working Clothes, Cloak Rooms and Seats, and everyone will be glad to make use of their experience. The treatment of feeding is likely to be especially useful, since it lies at the base of industrial efficiency. One passage puzzles us. The authors say (p. 252): "This branch of the subject is so commonplace, it offers so few scientific novelties, such scanty occasions for the exercise of intellectual ingenuity, that we cannot expect the reader to be greatly interested." They cannot be meaning to imply that it is only subjects which offer "scientific novelties," and "occasions for the exercise of intellectual ingenuity" that prove attractive: those of their readers who matter are in search of something more than this! For the rest, the value of the factory canteen is fully recognised, and the chapter on alcohol, though short, is perhaps as much as could be looked for. The subject is one of immense difficulty and beset with prejudice. Industrial drinking cannot be treated effectively by itself, but only as a part of the general hygiene of the worker.

In Part IV., which includes chapters on Labour Turnover, Supervision of Industrial Health, and Reclamation of the Disabled, the writers are dealing with familiar subjects, and give us valuable material from which to come to decisions. The same words of commendation might be employed of the work as a whole. It will be useful, especially to the industrial administrator, who, though often necessarily ignorant of the subjects treated, is anxious to learn and to act upon sound information.

PRINCIPLES OF IMMUNOLOGY.

First edition. By HOWARD T. KARSNER, M.D., Professor of Pathology, and ENRIQUE E. ECKER, Ph.D., Instructor in Immunology, Western Reserve University, Cleveland, U.S.A. London: J. B. Lippincott Company. 1921. Pp. 309. 21s.

THIS book has been written as "a concise statement of the facts and more important hypotheses concerning resistance to infection," and being designed for those readers who have no facilities for mastering the technical details of such an intricate subject, the work has been confined to fundamental principles without any elaborate descriptions of experiments. That the authors have produced so clear an account of their subject in face of the difficulties of their self-imposed task is no mean achievement.

Early in the book the authors face the vexed problem of theories of immunity, and although apparently not prepared altogether to discard Ehrlich's side-chain theory, they recognise that Ehrlich was much influenced by the status of chemistry which prevailed at the time the theory was enunciated and that modern researches on colloids have profoundly modified our views. A number of these researches are quoted (p. 49), particularly those emphasising the difficulties which surround the question of union of toxin and antitoxin. The authors find the question of specificity the most difficult to explain on a colloidal

basis, and we wish that more space could have been found for a full discussion of this aspect of the subject, since it has important bearings on the application of immunological theories to clinical practice. In the subsequent chapters dealing with individual toxins there is a concise description of the Schick test; a fairly full discussion on tetanus toxin viewed in the light of the war researches from 1914 onwards, together with army statistics; and a good account of the phyto- and zoötoxins. Antibodies also receive fairly full consideration. We note the inclusion of a description of Dreyer's method of performing the agglutination test, a full account of iso-hæmagglutinins and blood transfusion, the "typing" of anti-pneumococcal serums, and other recent researches. The discussion on the rôle of complement in immunity is exceptionally full and the Wassermann test enjoys its full prominence, but we could wish the authors had given more consideration to those questions of complement fixation in bacterial diseases—especially tuberculosis—which are giving rise to so much confusion of thought and practice at the present time. The cutaneous tests for asthma are given in detail—indeed, the whole section on anaphylaxis is dealt with comprehensively.

The weakest point of the book—a most unfortunate blemish—is the lack of detailed references. Beyond a short list of text-books on immunity given in the preface, there is not a reference to be found to original sources of information, beyond the authors' names. Some of the illustrations are most helpful, but we do not quite understand why the writers have included in a book dealing with principles and not with laboratory details, illustrations showing how laboratory animals are bled. These are, however, largely matters of detail. Viewed as a whole the book is an eminently sound text-book and can be recommended to the senior student as a safe guide to the fundamental principles of immunity.

PRACTICAL MEDICAL DICTIONARY

Of Words used in Medicine, with their Derivation and Pronunciation, including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance, and other special terms: Anatomical Tables of the titles in general use, and those sanctioned by the Basle Anatomical Convention; Pharmaceutical Preparations, official in the U.S. and British Pharmacopœias and contained in the National Formulary; Chemical and Therapeutic Information as to Mineral Springs of America and Europe, and comprehensive lists of Synonyms. Sixth revised edition. By THOMAS LATHROP STEDMAN, A.M., M.D. London: Baillière, Tindall and Cox. 1921. Illustrated. Pp. xii. + 1144. 42s.

WE received this book nearly six months ago, but deliberately delayed our review until we had opportunities of practically ascertaining the merits, and demerits if any, after continued consultation. This is the sixth and revised edition, and our previous notices hold good, but every dictionary, if kept steadily up to date, is in a sense a new book, not so much because many things may have to be added and a few perhaps subtracted, but because, with the march of events in any science like medicine, the relative importance of things alters, and where a long explanatory meaning might have to be appended to a work in the earlier stages of the lexicographer's art, in the later stages a much briefer definition suffices. How carefully Dr. Stedman has discharged what he calls the truly Sisyphean task of a continuous revision is indicated by the fact that, while much that is new has had to be included, suppressions and compressions have only necessitated in the current volume an increase of 20 pages.

Dr. Stedman shows his exactness by removing the numerous mistakes that occur in medical literature between words beginning "ideo" and the words beginning "idio," those beginning "ileo" and those beginning "ilio"; there are a good many authors who might be saved, by consulting pp. 484–485, mortifying little errors, while acquiring useful acquaintance with etymological points. In definitions, also, the dictionary is happy, while its catholicity is shown by the fact that we have practically never failed to find what we were looking for, even when such modern abbreviations as P.U.O. and V.D.H. were in question. It is now necessary to include these abbreviations in medical dictionaries, for they have passed into medical language. Three misprints only have been noted after six months' consultation, and we note them so as to help the author in carrying on for future issues. On p. xi. "Mamely" is given for "namely" in the definition of the abbreviation "sc."; on p. 655 the German "nahr" has the "a" unmodified; and on p. 1061 the editor cannot make up his mind how to spell John Tyndall's name.

As will be seen, we have employed this medical dictionary steadily and with convenience in the course of producing a medical journal, with the result that we are able to commend it, as before, very highly to our readers; but Dr. Stedman will be ill-advised to allow the pressure of new things to compel him to make the dictionary inconveniently large. He may be grateful therefore for the suggestion that some prefixes common to a great many words might appear in a paragraph, with the prefix only printed once, the affixes being assigned to it by hyphens. An examination of the entries under the prefix "laryng-" will reveal what we mean. While the plates are good and useful, space would be gained if some of the textual illustrations were suppressed; many of these can be found in more useful and detailed form in well-known text-books. "Feet" is the plural of "foot," but it seems hardly necessary to mention it—there may be other needless definitions, but we allude to this one with the comment that we have not found any others so clearly unwanted. This is considerable praise when it can be added that the exhaustive sub-title is justified by the contents.

ÉLECTROLOGIE.

By LOUIS DELHERM, Chef du Laboratoire d'Électro-radiologie de l'Hôpital de la Pitié, and ALBERT LAQUERRIÈRE, Chef du Laboratoire d'Électro-radiologie, Suppléant de l'Hôpital de la Pitié. Paris: A. Maloine et Fils. 1921. Pp. 324. Fr.18.

THIS book is the thirty-first volume of the series "Traité de Pathologie Médicale et de Thérapeutique Appliquée." It has been written, not as a complete treatise on medical electricity, but as a guide to the practitioner who wishes to learn something about the uses of electricity for diagnosis and treatment, and to practise the simpler methods which do not require special experience and elaborate apparatus. In the first part of the book the elementary physical principles are simply explained, together with the various electrical currents and the apparatus which produces them. In the second part, which occupies about three-quarters of the book, the diseases and morbid conditions suitable for electrical treatment are considered and their treatment described. Diseases of metabolism, of the skin, of the digestive tract, of the circulatory apparatus, of the nervous system, and of the uro-genital system are considered in separate chapters. Electro-diagnosis is described in a chapter on the treatment of diseases of the peripheral nerves and the neuralgias. In an appendix the risks that accompany the use of currents from the main and the way to avoid them are explained. The surgical uses of electricity as a means of cauterising abnormal tissue are not described. Bergonié's method of producing artificial exercise by the electrically provoked contraction of the muscles is fully dealt with, and the authors speak highly of the value of this treatment, not so much for the reduction of obesity, but for improving the health of gouty and plethoric individuals. A form of electrical lavage is described in detail, and the authors recommend it for cases of stasis of the colon. It combines mechanical and electrical stimulation of the intestinal muscle. The use of the continuous current obtained from dynamos,

especially the small models provided in the so-called universal machines, is strongly condemned, because these currents are not perfectly constant, and therefore cannot be used when a strong current is required. The authors show that the frequent failure to treat successfully many cases of pain due to neuralgia is due to the inability to apply currents of sufficient strength when these dynamos are used, because the patient is unable to bear a strong current if it is not absolutely constant.

This book would be more suitably addressed to those readers who have some experience of medical electrology. The general practitioner in this country will find it too large for the purpose for which it has been designed. The specialist will, however, find much that will interest him, for the descriptions are clear and the illustrations good.

THE SAHARA.

By PIERRE LOTI. Translated from the French by MARJORIE LAURIE. London: T. Werner Laurie. 1921. Pp. 216. 10*s.* 6*d.*

M. Loti shares with Kipling and M. Claude Farrère the faculty of making his readers feel that if they go out of the door they will at once be in the country about which he is writing. This feeling was very obvious in Madame Chrysanthème and is equally obvious in the book now before us, in which M. Loti gives us an unforgettable picture of the loneliness of life for Europeans in Senegal, of the witchery and magic of the land and of the horrible fascination which its manners and customs can and do exercise. Readers of Kipling will recollect that in his grim story called the "Mark of the Beast" he begins by saying, "East of Suez, some hold, the direct control of Providence ceases; Man being there handed over to the Gods and Devils of Asia. . . . ." The same thing, mutatis mutandis, holds good for Africa, especially the western part thereof, for whether it be simply the call of the bush, or that blessed word "environment," or hypnotic suggestion, or some form of devilry, it is an undoubted fact that men do get caught up into a very unpleasant set of circumstances, and M. Loti's story gives a vivid picture of the fate of a spahi who was thus enmeshed. It is intensely real and subtle.

The translation is good, but why should the translator have changed the title from "The Romance of a Spahi" to the Sahara? for the book *is* the romance of a spahi and has but little to do with the Sahara.

COLLOIDS.

Rôle des Colloïdes chez les Etres Vivants. Essai de Biocolloïdologie. Nouvelles Hypothèses dans le Domaine de la Biologie et de la Médecine. By AUGUSTE LUMIÈRE. Paris: Masson et Cie. 1921. Pp. 312. Fr.16.

THE author herein presents a theoretical discussion based upon certain of the properties of colloids. He epitomises his views in the statement that life is conditioned by the existence of the colloidal state; illness and death are caused by its flocculation or precipitation. There are many other properties of colloids than those specially selected for his theory, and it would have been of more value if these properties had also been brought into the discussion and carefully examined before the theory had been brought forward. It cannot be doubted that the colloidal state of the living cell and the colloidal state of the circulating and other fluids will be affected by extraneous reactions, such as the injections causing anaphylaxis, but other changes, especially the chemical, involving the production of the actual toxin, are more probably the real cause. The change of the colloidal state is the effect produced by these substances. The theory now put forward is of some interest and worth consideration, but further experiments, as pointed out by the author, are required. The little book contains a useful list of references to anaphylaxis and colloids and some very excellent illustrations.

BURDETT'S HOSPITALS AND CHARITIES, 1921.

The Year Book of Philanthropy and Hospital Annual. London: Scientific Press, Ltd. Pp. 1027. 17*s.* 6*d.*

THIS year book is now so widely known, and has been found so useful and reliable, that notice of a new issue seems almost superfluous. The customary concise and valuable information is given concerning hospitals and all other forms of medical, nursing, and convalescent establishments, not only in this country, but also in the Dominions and Colonies and in the U.S.A. Considerable revision has been made in the directory of institutions; the names of those which have remained closed for two years or more have been omitted, and particulars of charitable institutions which have not supplied information for some years have been curtailed. To the military and naval section have been added the hospitals for which the Ministry of Health is financially liable, with a definition of the class to which each hospital belongs. The chapter and table concerning convalescent homes are omitted, pending a time when more of these institutions shall have returned to normal conditions. A list of hospitals approved by the Ministry of Health for the treatment of venereal diseases has been added to the index. It may occur to some readers that "an exhaustive record of charitable work for the year" is not absolutely complete without a reference to the Homes of St. Giles, the one establishment in this country devoted to the treatment of leprosy.

OPHTHALMOLOGY.

Grundriss der Augenheilkunde. Second edition. By Dr. C. H. MAY and Dr. E. H. OPPENHEIMER. Revised and translated into German by Dr. OPPENHEIMER. Berlin: August Hirschwald. 1921. With 266 figures and 22 coloured plates. Pp. 427. M.60.

THIS, one of several moderate-sized text-books of ophthalmology published in Germany since the war, is the German edition of a book originally published in America, and is considerably enriched by figures and coloured plates from the American edition. The authors' task appears to have been for the most part adequately performed, though in some parts the matter is scarcely up to date. How long shall we continue to find in text-books the traditional classification of iritis into syphilitic, rheumatic, and gouty, without any recognition of the importance either of gonorrhœa or of septic infection in its causation? In the operative treatment of glaucoma, trephining of the sclera is allotted only a few lines in small print. The account of toxic amblyopia is insufficient and the section on colour-blindness is written on traditional lines. It is a pity that the binding is so bad that the pages fall asunder as soon as they are cut.

JOURNALS.

QUARTERLY JOURNAL OF MEDICINE (October, 1921).—R. Coope: The Sugar Content of the Cerebro-spinal Fluid and its Diagnostic Value, especially in Encephalitis Lethargica. In the first accounts of encephalitis lethargica in 1918 the cerebro-spinal fluid was described as showing no marked abnormalities, but in the 1920 epidemic several French observers found an increase in its sugar content. Accepting 60 to 70 mg. sugar per 100 c.cm. fluid as normal, 54 per cent. of the 11 cases of encephalitis lethargica examined by the author showed an excess of sugar, but as in a series of 69 cases of other diseases, chiefly insanities, an excess of sugar was found in 53 per cent., this cannot be regarded as diagnostic. In 15 cases, however, of tuberculous and acute meningitis, all showed a reduction in sugar content, often to a considerable degree.—R. A. Guy: Observations on the Percentage of Sugar in the Blood of Atrophic Infants. The blood sugar was determined in the case of 18 marasmic infants, using 43 normal infants as a control. The wasters showed a slightly lower percentage of blood sugar, but no relationship was established between

the amount of sugar ingested, and that found in the blood, and the latter does not afford an indication of carbohydrate absorption.—E. E. Laslett: Notes on Four Cases of Paroxysmal Tachycardia. The first, a case of paroxysmal fibrillation of the auricles in a man, aged 46, was considered to be due to excessive tobacco-smoking. It disappeared, to a large extent, when the tobacco consumption was reduced, but tended to reappear with resumption of the habit. The second was a man, aged 48, also a heavy smoker, who suffered from attacks of giddiness, due to paroxysms of auricular tachycardia. On smoking less the attacks disappeared. The third was a man, aged 19, who had been a very heavy cigarette-smoker from an early age. He died shortly after a recurrent attack of tachycardia, which was probably ventricular in origin. The fourth, a man, aged 55, appeared to be a true case of ventricular tachycardia, of which probably only six undoubted cases are on record. Electrocardiographic evidence is not forthcoming in this case.—William Stobie: An Inquiry into the Clinical Manifestations of a Syphilitic Infection upon the Heart. The author endeavours to determine the proportion of cases of heart lesions met with in clinical practice which are due to syphilis. He commences with a brief historical review of the descriptions of syphilitic cardiac lesions, and then proceeds to discuss their pathology and symptoms. He found clinically that in 18 cases of aortic disease 13 gave a history of syphilis, a positive Wassermann reaction, or both. In 15 cases of mitral stenosis 3 gave a positive Wassermann reaction, and of these none gave a history of rheumatic fever, but one had suffered from scarlet fever. None of his 16 cases of mitral regurgitation gave a positive Wassermann reaction, but 4 out of 7 cases of myocarditis reacted positively to this test, and were very suggestive of being syphilitic in origin. A series of 13 cases of congenital syphilis of varying ages was examined, but only one exhibited a cardiac abnormality. In one fatal case of this disease a gumma was present under the endocardium, and spirochætes were found in the pericardial fluid.—H. F. Höst and Rolf Hatlehol: Investigations on the Concentration of the Nitrogenous Metabolic Products in the Blood under Physiological and Pathological Conditions. The authors investigated the nitrogenous blood constituents, using Folin's methods, in 34 healthy and diseased people. The most interesting results were obtained in a further series of 4 cases of kidney disease, each exhibiting uræmic symptoms, which all terminated fatally. The residual N, urea N, uric acid, and creatinin were determined simultaneously and daily up to the time of death. A great and rapid accumulation of blood urea was demonstrated, which could not be explained simply by diminished excretion, and must be in part due to accelerated protein katabolism. The concentration of residual N, urea N, and creatinin was increased up to the time of death, but the most constant feature was the marked ante-agonal increase of creatinin. It appears probable that there is a causal relation between the retention of the N products and the development of the symptom-complex known as uræmia.—J. M. H. Campbell: Some Aspects of Exophthalmic Goitre. The author has endeavoured to trace all the cases of exophthamic goitre treated in the wards of Guy's Hospital between 1908 and 1917. The article is thus an extension of the investigations of Hale White on similar cases treated at the same institution during the years 1888 to 1907 and previously published (*Q. J. of M.*, 1910-11, iv., 89). Of the 127 cases treated 89 were traced by letter up to the time of death, or for periods varying from 4 to 16 years. The author works out the figures for prognosis as approximately 40 per cent. almost cured, 30 per cent. very much improved, 15 per cent. worse or only slightly improved, and 15 per cent. died. The question of treatment is also considered, and it is stated that the final results from thyroidectomy do not appear greatly superior to those of medical treatment, although there is usually a great immediate improvement. Those who received X ray treatment in hospital did not appear to recover more rapidly than those who received only rest and medicine.—E. O'Connor: Critical Review—The Results of Gonorrhœal Infection of the Nervous System. The author, after an exhaustive review of the literature, and an investigation of the records of special and general hospitals in London, is of the usually accepted opinion that nervous complications in gonorrhœa are exteremely rare. Even when they are present it is difficult to prove that they are due to the gonococcus or the gonotoxin. Gonorrhœal cerebro-spinal meningitis has been clinically established, and similarly a gonococcal meningo-myelitis probably occurs. The evidence for the existence of psychoses, neuritis, neuralgia, and trophoneurosis as direct results of gonorrhœal infection is as yet inconclusive.

JOURNAL OF INDUSTRIAL HYGIENE.—An article by C. K. Drinker and K. M. Thomson appears in the August issue entitled "Does the Magnetic Field Constitute an Industrial Hazard?" The research upon which the paper is based is of interest for the scientific way in which it was conducted, even though the conclusions arrived at are negative. Blood and nerve-muscle preparations were exposed to the greatest field strengths obtainable, up to 18,725 c.g.s. lines per square centimetre; and dancing mice were exposed for three months to fields of approximately 2800 c.g.s. lines per square centimetre for an average of 15 hours daily. The methods used and the records obtained are illustrated. None of these experiments gave the slightest evidence of physiological effects from the magnetic field. The experiments utilised field strengths far greater than those to which workmen are subjected, and, since the tissues employed were those most likely to show vulnerability, it would seem certain that the magnetic field has no significance as a health hazard.—J. P. Baumberger contributes an article in the September number on Fatigue and Error in a Mental Occupation. The process observed was that of preparing pay-checks which was performed by clerks for a few hours at irregular times on each day; the clerks for the remainder of the time were employed on routine work in the auditing department. The process studied thus provided a ready-made test of fatigue produced by auditing, interposed in the normal course of work. When the rapidity of output was measured at different hours on different days, curves were obtained typical of those observed in studies of industrial fatigue; if the output of the first hour, which exceeded that of the second, be omitted, the curves both for morning and afternoon were of the saddle-back shape; and the output of the morning was greater than that of the afternoon. Errors in preparing the pay-checks were enumerated, when the curve of errors was found to be converse to that of output; and the average of morning errors to be below that of afternoon errors. The results obtained may advantageously be compared with those of Muscio,[1] who has obtained, from medical students and typists, curves with striking resemblance to those of industrial output by charting subjective "feelings of fatigue," as stated by the individuals observed. The conclusions to be drawn from these two pieces of research are that diurnal variations in activity exist which are influenced by meal-times; and that, although we can feel fatigued without being physically tired, "feelings of fatigue" are a close measure of actual physical tiredness.—Headache, which is the most important among "feelings of fatigue," is dealt with in the October number by S. Cobb and D. C. Parmenter. The occurrence of this symptom among a number of employees was carefully investigated, and the conclusion is reached that it is a common complaint among industrial workers, causing in some units as much as 23 per cent. of the cases of lost time, and an average of 10 to 15 per cent. in the mercantile establishments specially studied. The commonest causes of headache

[1] "Feeling-tone in Industry," B. Muscio, British Journal of Psychology, October, 1921.

among the employees examined were found to be the onset of acute infection, constipation, poor hygiene, psycho-neurosis, and eye-strain in the order named. One variety, fatigue headache, is specially described; it occurs as the result of over-work, mental or physical, particularly among persons with unstable vaso-motor systems. The writers call for more extensive study of headache by physicians working in industrial communities.—The scarcity of contributions from this side of the Atlantic in this Anglo-American journal continues to be noticeable.

BIO-CHEMICAL JOURNAL. Vol. XV., No. 3. 1921.—Influence of Free Fatty Acids in the Intestinal Contents on the Excretion of Calcium and Phosphorus, by S. F. Telfer. The absence of bile from the intestine occasioned by biliary atresia and obstructive jaundice leads to no marked reduction of the completeness of the splitting of fats, but to the appearance of a very large amount of fatty acid in the form of calcium soaps in the fæces. The calcium would be normally excreted as calcium phosphate. Under the pathological conditions the phosphoric acid remains free, is absorbed from the intestine, and appears in increased amount in the urine.—Effects of an Unbalanced Diet on the Production of Guinea-pig Scurvy, by G. M. Findlay. The development of scurvy in guinea-pigs deprived of vitamin C is not accelerated by feeding excess of either protein, fat, or carbohydrate, but death occurs rather earlier on an excessive protein or carbohydrate diet than on a fat diet.—Oxygen Consumption of Amphibian Muscle and Nerve, by N. K. Adam. The author's apparatus shows very clearly the regular consumption of oxygen by a resting muscle and nerve, the largely increased rate of absorption after stimulation of the muscle and a very small and doubtful increase as a result of stimulation of the nerve.—A Critical Study of the Methods of Estimating Cholesterol and Allied Substances, by J. A. Gardner and M. Williams.—A Source of Error in the Colorimetric Methods for the Estimation of Cholesterol in Tissue Fats, by J. A. Gardner and F. W. Fox.—Specific Electrical Resistance of Frog's Muscle, by W. Hartree and A. V. Hill. The specific conductivity of a muscle at any temperature is the same as that of a sodium chloride solution of 0·36 per cent.—i.e., half the isotonic strength—at the same temperature. This seems to be due to a hindrance of the diffusion of the sodium and chlorine ions by membranes and colloidal structures in the tissue.—Stability of Tryptophan in Baryta Hydrolysis, by H. Onslow; Nature of the Substances Precipitated by Mercuric Sulphate from Hydrolysed Caseinogen, with reference to the Estimation and Isolation of Tryptophan, by the same author.—Method for the Colorimetric Estimation of Carnosine, by W. M. Clifford.—Deterioration of Cotton on Wet Storage, by N. Fleming and A. C. Thaysen.—Nature of the Reducing Substance in Human Blood, by E. A. Cooper and H. Walker. Improvements in MacLean's method of estimating blood sugar are described. Uric acid and creatinine do not vitiate the method. The reducing power of deproteinised blood is usually increased after boiling with dilute hydrochloric acid; this indicates the presence of some hydrolysable complex. But the increase of reducing power so produced is difficult to estimate accurately because the acid tends to destroy the glucose already present, and further, the sodium chloride formed on neutralisation exerts a powerful inhibitory effect on the apparent reducing power of the sugar.—Differential Dialysis of the Antineuritic and the Antiscorbutic Factors, by S. S. Zilva and M. Miura. The antineuritic and antiscorbutic vitamins are found to pass through a collodion dialysing membrane of such permeability that it also allows the passage of such molecules as methylene-blue, neutral red, and saponine.—Relation of the Fat-Soluble Factor to Rickets and Growth in Pigs, by S. S. Zilva, J. Golding, J. C. Drummond, and K. H. Coward. No definite rickets was induced in sucking-pigs fed from birth on a diet rigorously restricted in the fat-soluble factor. The addition of the fat-soluble factor in the form of cream, cod-liver oil, and lucerne to a deficient diet stimulated growth in pigs declining in weight.—Synthesis of Vitamin B by Yeasts (Preliminary Note), by A. Harden and S. S. Zilva. Saccharomyces ellipsoides can synthesise vitamin B when grown on media not originally containing it.—Action of Salts and Non-Electrolytes upon Buffer Solutions and Amphoteric Electrolytes and the Relation of these Effects to the Permeability of the Cell, by D. Haynes. A detailed discussion, partly theoretical, partly practical, of the effects of neutral salts and non-electrolytes on the reaction of buffer mixtures and of the properties of ampholytes. A theory of the permeability of membranes is put forward in which the membrane is supposed to be most readily permeable in the uncharged iso-electric condition. Changes of permeability may then be the result of changes of reaction in the buffer solution which constitutes the liquid phase of the membrane, or of a change in the iso-electric point of the more solid phase.

New Inventions.

A NEW STETHOSCOPE.

I HAVE found this stethoscope a great advantage over ordinary stethoscopes. Its merits are chiefly derived from the fact that the chest-piece is set at a right angle, which allows the instrument to be more readily adjusted and to be used under clothing, so that very little undressing is required. The instrument can be used to examine dependent parts, the heart sounds being more distinctly audible when

FIG. 1. FIG. 2.

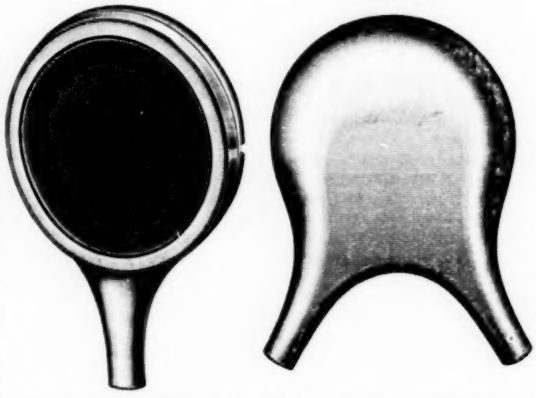


FIG. 1.—Single chest-piece. This may be used with a single tube for those who use but one ear, or it may be connected with a binaural frame with a Y-shaped connexion.
FIG. 2.—Double chest-piece for use with binaural frame.

the patient lies face downward. In the same manner the fœtal heart is best heard, and prostrate and paralysed patients may be thoroughly examined without disturbing their position. In the case of children the chest can be auscultated whilst the doctor stands behind the child, thus tending to prevent crying through fright. In a busy practice this instrument saves much time and gives much information in a hurried examination. It can be used as an ordinary stethoscope by merely unscrewing the diaphragm.

The chest-pieces can be obtained from all surgical instrument dealers at a cost of 10*s.* 6*d.* each.

WM. C. MINCHIN, M.D., B.Ch., B.A.O. Dub.
Sheerness.

Lieut.-Col. J. H. Dudgeon, V.D., J.P., of Stainburn, near Workington, has been appointed Deputy Lieutenant for the County of Cumberland.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 12, 1921.

Rural Medical Service in U.S.A.

IN this country we are certainly not sufficiently grateful to the rural practitioner, on whom the medical welfare of scattered populations in many shires is dependent. He has not within easy reach facilities for consultation with specialist physicians or surgeons, or for the hospital treatment of complicated cases; and the nursing on which he can call is still too often exiguous and defective. It is the resourcefulness and competence of a high proportion of rural practitioners which oft-times has averted calamity and safeguarded the health of rural communities. A great ideal of the Ministry of Health is to strengthen the position of the general practitioner by placing him in close organic relation with specialists in the various branches of medicine. We hope that this service is now in the making, though the difficulties which lie ahead are many and various.

There are two forces tending to modify the problem of rural medical attendance: the increasing facilities for easy travel of doctors and patients by road and train, and on the other hand, the growing dislike of medical practitioners to settle in the remote rural districts where they are most urgently required. The rural practitioner has not available laboratory and consultant facilities, or hospital beds, or skilled nursing, for the large proportion of his patients for whom these are required. That provision of exactly these things formed a great part of the scheme outlined in the Dawson Report is well known; but for the time being the country doctor's disabilities in many directions remain. Much can be learnt from a comparison with American experience, which is one of greater difficulties and scantier and less efficient service than in this country; and a report printed in the October issue of the *American Journal of Public Health* of a Committee on Medical Service contains information directly to the point. The indicated problems have been studied especially in New York State, but the difficulties in other States are even more acute. In New York State there are 83 places containing a population varying from four or five hundred to several thousands which have applied to the State Department of Health to assist them in securing a physician. There are stated to be in the whole country thousands of communities, even in the most populous States, which are similarly situated. The reasons given for this rural lack of doctors in the United States include the physical hardships of rural practice, and the fact that doctors share the psychological trend of many men towards city life. A more potent reason is the realisation by recent medical graduates in the States of the complexity and difficulties of modern medical diagnosis and treatment; and in America as in this country, while it is agreed that consultative facilities must be made available in rural as in city practice, the question is being asked whether our medical schools are not tending to exaggerate the dependence of medical practice on various branches of laboratory work, and whether the powers of personal observation are failing to be educated in these schools. All reflections of this sort have to be carefully scrutinised—in the guise of common-sense they often advocate scientific retrogression. Specialists, some with most limited and unbalanced knowledge, are multiplying in the States, and it is becoming seriously difficult for the American public to obtain well-informed and skilful medical attendance in ordinary cases of illness. Here are the words of the report referred to above:—

> "In his passion for arriving at an exact diagnosis the modern physician too often seems to overlook, or has not been taught to value, the little niceties of medical practice, the simple remedies, attention to details, however trivial, the personal touch which made the physician of a bygone day such a welcome visitor to the sick-room."

The menace of undue specialisation is regarded so seriously by this Committee as to lead them to ask the question whether the time has not arrived when, for the protection of the public and the good name of the medical profession, the licensing boards should require medical graduates to engage for a period of years in general practice before being permitted to take up a specialty, including that of general surgery, and then only after a minimum period of special study under stipulated conditions. This is a more reasonable proposition than the one which used to be put forward in this country to return to the old apprenticeship system, under which the student was supposed to learn how to conduct a practice while laying in some haphazard way the foundations of a scientific training. But each suggestion appears to regard the work of the laboratory as something separate from clinical work, while the whole spirit of modern education is to make of scientific training a living and growing whole. To institute special examinations would do little to prevent the chances of bad specialism; to restrain the recently qualified man from following his bent while inspired with keenness, and while in close touch with his educational centre and its facilities, would certainly not increase the chances of good specialism.

The public health department of the State of New York, of which Dr. HERMANN BIGGS is the Chief Commissioner, has boldly proposed by means of a State subsidy to place in all districts of the State where they are needed, and when consent to this is given by the county and city governments, the following provisions—viz., hospitals with adequate medical service, laboratories, nursing service, and occasional clinic and consultation services, provided by the State Department of Health. The Bills for initiating these services, called "Health Center Bills," have twice failed to pass the two legislatures of the State, largely owing to the opposition of the medical profession. That they will be further pressed is certain, as also that in some form or other this essential means of assisting rural medical practitioners in their arduous and difficult work will eventually be provided. It will be noted that the proposed service leaves the local service of private medical practice untouched, supplementing it by providing what otherwise would be almost entirely lacking.

The Health of the School Children.[1]

IN the annual report of the Chief Medical Officer of the Board of Education we have been accustomed to find a detailed study of the defaults from the normal in the health of our school population, with valuable comments upon their causes and the preferable methods of their prevention. The document which appeared last week is as interesting as any of its predecessors, and no citizen, medical or lay, can read it without

[1] Annual Report of the Chief Medical Officer of the Board of Education, 1920. Published by His Majesty's Stationery Office. 1921. 6s.

being struck by two things—namely, in the first place, the enormous amount that is now done by the educational authorities in behalf of their charges; and in the second place, the almost unlimited field for effort which remains. The prevalence of dental disease, of ophthalmic defects, of tuberculosis in varied forms, and mental defectivity and abnormality make up an appalling total, even while we can congratulate ourselves upon progress. That these sad things were with us in greater bulk before there was any machinery for their detection or alleviation is undoubted, but the evils being uncharted remained largely unnoticed. Now we all know that the health of our school children is seriously assailed in countless directions, and it is a matter of quick conscience with us to do everything to remedy the ills; for it is to our young that we have to look, more anxiously than ever, to make good the wastage and ill sequences of war. This sentiment is on every lip, but it should also stimulate every action.

We can make no attempt to review seriatim the contents of this closely packed report, nor does the concentrated information in the different chapters lend itself to abstraction or condensation. The report is essentially one that should be read by the medical profession and public alike; if here two things are selected for comment it is because the opportunity offered to the public of coöperation with medicine in remedial measures is very clearly indicated. The problem of the care of the eyes of many thousands of British school children in England from their infancy throughout their school age is a very pressing one. The eyesight of so many is defective that the amount of work here presented to remedial medicine may seem unending. And, no doubt, before the number of the defective can be reduced to a figure representing only the measure of unpreventable default, a great deal of steady and intensive work must be done. It should be done as quickly as possible. Defective vision stands, Sir GEORGE NEWMAN reminds us, in the front rank of all school maladies, for by the eye the child mainly learns, while all methods employed to teach him tend necessarily to increase any existing mischief. Yet it is during elementary school life that every practicable step should be taken to detect and remedy physical defects. School medical officers work to this end with assiduity, but their efforts must be supplemented by a public, the whole of which has to-day received some measure of education, if those efforts are to bear prompt fruit. Medical wisdom may diagnose the form and extent of the physical mischief, may secure proper natural and artificial lighting in the schools, may insist upon the school furniture being of the right sort and rightly placed, and may prescribe the glasses appropriate to the case, but if the parents do not play their part much of this good and costly work will be wasted. If the small patients for whom glasses have been ordered do not obtain them because their parents have taken no pains in the matter, medicine can hardly be blamed if the process of catching up a mass of accumulated evil becomes a lengthy one. This one instance of the provision of glasses shows well how necessary is public coöperation. Where there are satisfactory arrangements for the following-up of children under medical treatment there will be many fewer cases of apathetic neglect. The parents do not really understand how necessary it is that measures for the relief of eye mischief, when their need has been discovered, should be taken immediately. The trials of domesticity press severely upon many of them, but if they can be made to realise the urgency that should mark their share in the treatment of their children, few of them would be backward. The Royal Surgical Aid Society has now come forward with an offer to provide the best English lenses in English metal steel frames at a cost of one subscriber's letter for each pair of ordinary spherical corrections, so that the cost of spectacles, both initial and at renewal, is largely met. In this way a real excuse for the do-nothing attitude has been removed.

An important section of the report is devoted to physical education in schools, which Sir GEORGE NEWMAN has long recognised as one of the most important branches of preventive medicine as well as of education. Organisers of physical training have now been appointed by 79 out of 316 education authorities in England and Wales, and the syllabus of this training, reissued in 1919, has had a circulation running well into six figures. Dealing with the rôle of games in secondary schools for girls, the report sees no reason to anticipate that injury, either immediate or remote, will result if the games are properly chosen and played in moderation, and in these words sets out a conclusion substantially the same as that reached in the recent discussion at the Medical Officers of Schools Association (THE LANCET, Oct. 29th, p. 902). But a warning is given against making undue demands upon the physical strength of the present generation of girls which has not been trained for generations in vigorous bodily exercises of all kinds. The medical officer of the Board of Education seems almost to make an excursion into Lamarckianism when he adds that boys have acquired a tolerance of exertion, a physiological habit of resistance to fatigue which girls have yet had no equal chance of acquiring. Games simpler than hockey or lacrosse—e.g., net-ball and rounders—are found more suitable for pupils at a town school between the ages of 14 and 17. Where no playing field is available, ingenuity and resource on the part of the gymnastic mistress will result in more interest and variety in playground and gymnasium games than these are generally found to possess. All should be directed towards forming habits of open-air recreation and love of pursuits likely to bring girls out of doors and into the fresh air during an after life which for most of them will be of a sedentary character. The results of remedial gymnastics in secondary schools are frankly admitted to have been disappointing, and the intensive treatment of marked abnormalities in a few pupils should be supplanted by small daily classes in corrective exercises for all children needing special attention, the needs of the many taking precedence over those of the few. Attention is called to the work of Fröken FALK of Stockholm, which is largely remodelling gymnastics in the Scandinavian countries where there is a definite reaction against the specialist in physical education alone. A recent decision on the part of the London County Council to go ahead with increasing from 25 to 50 its classes of remedial exercises is in harmony with the spirit of this report, and displays, moreover, that practical coöperation between medical and lay guidance in which the hopes of the future reside.

Defective Diet as a Cause of Sterility.

IN works on sterility the attention of the reader is chiefly drawn to the anatomical and pathological causes of the condition. Very little is said about physiological causes. We might define as cases of physiological sterility those in which there is apparently no obstacle to the union of the gametes, but in which, owing to some faulty characteristics in either the spermatozoa or the ova, union does not take place;

including those also in which union does take place, but the zygote is incapable of full development. For it may perish, as Prof. ARTHUR ROBINSON has pointed out,[1] in the morula or blastula stage, or even after it has become attached to the decidua, when an abortion results. These faulty characteristics may be developmental in origin; they may even, according to Prof. ROBINSON'S suggestive view, be a manifestation of the variations which occur normally in the reproductive process. On the other hand, they may be due to faulty parental metabolism, which in turn may depend on the absence of particular foodstuffs in the diet. The influence of diet on reproduction has long been known, especially as it concerns the lower forms of animal life. But relatively little has been done in the exploration of this influence in higher types. REYNOLDS and MACOMBER [2] have experimented on the influence of diet in causing sterility in a group of the mammalia—namely, rats. They constructed four "deficiency diets," the first being low in fat-soluble vitamin, the second low in proteins, the third low in salts, especially calcium; the fourth was low in all three, but had an excess of carbohydrates, and is called by the authors a "double-deficiency" or war diet. On a stock diet, 65 per cent. of the matings of these rats proved fertile; when they were fed on deficiency diets, which were given in unlimited quantity, the percentage of fertile matings fell to 55 when the deficiency was in fat-soluble vitamin, 31 when the deficiency was in calcium, and 14 when the deficiency was in proteins. The fertility of rats raised on these diets was also delayed. The fertilities of individual rats were ascertained by repeated matings, and some striking results were obtained, for it was found that the expectation of fertility of a given mating could be approximately ascertained by multiplying the individual fertilities. Thus two individuals with a calculated fertility of 0·8 each would yield a product of 0·64, which represents the standard fertility of these rats, as mentioned above; and the union of two such individuals would almost certainly be fertile. When the product of the fertilities falls below 0·45, the mating is infertile; thus, if a rat with a fertility of 0·8, were mated with one of 0·5 (product 0·40) the mating would be sterile. When the ovaries of rats on deficiency diets were examined microscopically, they showed no anatomical changes to distinguish them from the ovaries of normal animals, except those of rats fed on the double-deficiency diet, which did exhibit certain changes which the authors could not interpret. The American authors remark that "the work of ROBINSON on prenatal death makes it probable that certain ova contain within themselves conditions which make complete development impossible; but these conditions may or may not be morphologically visible." One further observation is noteworthy. Among rats fed on stock diet, macerated fœtuses appear to be unknown; at least the authors have been unable to find any mention of such in the literature. But in matings on the single-deficiency diets four such deliveries occurred, and there were two more in eight deliveries of young rats who had been reared on the war diet and were subsequently placed on ample diet and mated with normal rats.

REYNOLDS and MACOMBER properly point out that it is unsafe to reason from one species to another. But they cite some most instructive cases. In one a married couple had had no living children, each pregnancy resulting in miscarriage; a careful inquiry brought out the fact that the diet of the mother was obviously deficient in calcium, for after this was remedied, she produced a living child. In another case the husband had been a well-known sportsman, eating a large protein diet. He took up professional work and a sedentary life, and then married: one miscarriage was the only result. He went in for three months' athletic training, with only moderate intellectual work, and shortly after his wife conceived, and later was delivered at term. In a third case the normal assimilation of food by the wife was interfered with by an enormously over-loaded sigmoid. Attention to the bowels was followed by pregnancy and the delivery of a living child. In a fourth case the husband was thoroughly fertile but the wife had an anteflexion and an undeveloped cervix, with a cystic right ovary. She was treated by operation, but though dysmenorrhœa was relieved, and the general condition improved, no pregnancy followed. She was 20 pounds under the insurance weight, tired easily, and was pale and nervous. She was put on a regulated diet designed to increase weight, and under this regimen she gained 10 pounds in weight in two months. A year later she reported that she was six months pregnant, and she was subsequently delivered at term.

These results may mean only that the chances of fertility are improved when both parents are in good condition, but it would appear that there is anyhow room for further research along these lines. In consideration of cases of sterility, attention is too often limited to the anatomical and pathological conditions, whereas in some cases at least the physiological conditions may not be conducive to fertility.

[1] THE LANCET, May 14th, 1921.
[2] Jour. of Amer. Med. Assoc., July 16th, 1921.

THE SCOPE OF UROLOGY.

ACCEPTING the dictionary definition of urology—the sum of what is known regarding the urine—the specialty covers a very wide field of medicine; and in this sense it has long been construed by the American Urological Association, and by continental writers such as FRISCH and ZUCKERKANDL. A recent volume of transactions of the former contains articles on renal tuberculosis and on the specific gravity of the blood. The standard text-book by the latter includes an exhaustive section on the chemical examination of the urine. The Section of Urology of the Royal Society of Medicine was travelling in the same direction when it appointed a physician to fill the presidential chair this year; and Sir THOMAS HORDER, whose address we print in full at the front of this issue, after paying a tribute to the work of his predecessor, Sir PETER FREYER, expressed the hope that surgeons, physicians, bacteriologists, and biochemists should be numbered among the members of the Section. That was the desire of those to whose efforts the Section owed its being.

NATIONAL HEALTH INSURANCE: GOVERNMENT OF IRELAND ACT.—The National Health Insurance Joint Committee has appointed a committee, under the chairmanship of Sir Alfred Watson, K.C.B., the Government Actuary, to consider the steps necessary to carry out the provisions of the Government of Ireland Act in respect of National Health Insurance. The membership of the committee is as follows: Sir Alfred W. Watson, K.C.B., chairman; Mr. J. A. Dale, Permanent Secretary of the Ministry of Labour (Northern Ireland); Sir Joseph Glynn, chairman of the National Health Insurance Commission (Ireland); Mr. M. L. Gwyer, C.B., solicitor to the Ministry of Health; Sir Walter S. Kinnear, K.B.E., deputy chairman of the National Health Insurance Joint Committee; Mr. E. J. Strohmenger, C.B., financial adviser to the National Health Insurance Joint Committee. Inquiries should be addressed to the Secretary of the Committee, Mr. G. S. W. Epps, Government Actuary's Department, Buckingham Gate, London, S.W. 1.

Annotations.

"Ne quid nimis."

NOTIFIED INFECTIOUS DISEASE IN 1920.

A REPORT on the Incidence of Notifiable Infectious Diseases, just issued[1] by the Ministry of Health, gives the figures for each sanitary district in England and Wales during the year 1920. The total numbers, along with the rate per 1000 of population, are thus stated :—

	Number of cases notified.	Rate per 1000 of population.
Scarlet fever	119,490	3·19
Diphtheria	69,481	1·86
Tuberculosis { Pulmonary	61,665	1·65
Tuberculosis { Other forms	15,851	0·42
Small-pox	263	0·01
Typhoid	3,109	0·08
Continued fever	35	—
Relapsing fever	7	—
Pneumonia	38,859	1·04
Cerebro-spinal fever	583	0·02
Encephalitis lethargica	890	0·02
Polio-myelitis	293	0·01
Polio-encephalitis	36	—
Dysentery	1,353	0·04
Trench fever	39	—
Malaria (contracted in England)	32	—
Erysipelas	16,051	0·43
Puerperal fever	2,898	0·08
Ophthalmia neonatorum	10,304	—

No cases of cholera were notified during 1920. There were three cases of plague, two of which occurred in the Port of London and one in the county borough of Liverpool. Two cases of typhus were notified from the port of Weymouth. Of the diseases with marked seasonal frequency the maximum of scarlet fever occurred in the week ending Nov. 13th, of diphtheria Jan. 24th, of typhoid Sept. 18th, of cerebro-spinal fever March 13th and 27th, of polio-myelitis Oct. 9th, and of encephalitis lethargica in the week ending Jan. 1st, 1921. Scarlet fever and diphtheria were each more plentiful by about a third than in the preceding year, encephalitis lethargica by more than one-half. Of ophthalmia 1656 more cases were notified than in 1919 and 3772 more than in 1918. The 1920 rate for ophthalmia was 10·76 per 1000 births. Most of the notifications of dysentery and trench fever related to recurrent attacks in men who had contracted the disease abroad. Similar figures for diseases notified during 1920 in the smaller American cities have just been issued.[2] But in this case the totals are not given, as the returns are admittedly incomplete.

STREET TRADING IN LONDON.

A DEPARTMENTAL Committee is shortly to deal with street trading, and evidence on the following points could with advantage be obtained. In streets used as markets standpipes for the supply of water should be erected. A supply of clean water would be of special value to the vendors of fish, vegetables, and ice-creams, as well as to coffee-stalls. In London a convenient form of standpipe is in Holborn, where it has replaced the use of watering troughs. The free supply of galvanised iron bins to stall-holders has been found to be an advantage in the case of London street markets; very few complaints of nuisance in connexion with such refuse as cabbage leaves, fish offal, &c., have occurred after their issue. Vendors of food should be required to give the address of premises where their unsold food is stored; too often it is in an open yard. To prevent contamination by street dust or domestic animals, food for sale should be placed at not less than 2 ft. 6 in. or 3 ft. from the ground. Articles such as butter, margarine, and cheese, which are not generally cooked or washed before consumption, should be kept covered. Although the same requirement should in equity be made in the case of these articles in shops, yet the same likelihood of contamination does not, in fact, occur as when they are exposed in the open street. Experience shows that sanitary conveniences which are chiefly used by vendors in street markets are a fertile source of complaint unless supervised by an attendant. In streets of tenement houses stall-holders are apt to use the sanitary conveniences and the backyards of the ground-floor tenements, and in consequence nuisances arise. In view of the fact that street stalls can only be run at a profit when placed in streets of a different description—viz., streets with shops where customers are attracted and accustomed to shop—the forbidding of the use of streets containing a large proportion of "houses let in lodgings" would be no hardship to the stall-holders. Women should not be allowed to hawk articles in the streets when accompanied by babies or other young children. In some instances the mother brings her baby with her because the child is ill and requires her attention. Some, at least, of these women actually undertake a daily journey from a distant suburb to the central parts of London to secure a larger sympathetic clientèle. Street musicians are often accompanied by young children, who act as collectors of money; the baby in the cradle on an organ necessarily risks exposure to inclement weather. But it is at least doubtful whether the section of the Children Act prohibiting the exposure of a child in a manner likely to cause him unnecessary suffering or injury to his health, was intended to include exposure of this kind. The duty of dealing with abuses might well be laid on the police who are on the spot. Though we have had the metropolis in our mind during these comments, the abuses to be guarded against may make their appearance in any urban centre.

SCLEROSING NON-SUPPURATIVE OSTEOMYELITIS.

AT the recent meeting of the American Medical Association Dr. S. Fosdick Jones,[1] of Denver, read a paper before the Section on Orthopædic Surgery on the rare condition known as sclerosing non-suppurative osteomyelitis, the classical description of which was given by Garrè in 1891, based on his observations in the Tubingen Clinic of Prof. Bruns, although an isolated case had been reported by Kluppel in 1879. In the great majority of cases the onset of the disease is acute, accompanied by a high fever, swelling of the affected limb, pain at the site of the bone lesion, and considerable infiltration of the soft parts; but the skin over the affected bone is not reddened, and there is no formation of pus. As the temperature subsides the swelling of the soft parts disappears, and only the permanent enlargement of the bone remains. The condition must be distinguished from sarcoma of bone, bone syphilis, and solid osteitis fibrosa. Although nocturnal pains in the bone are common to both diseases, the absence of other syphilitic manifestations, the gradual disappearance of the pain, and the negative Wassermann reaction in the blood and cerebro-spinal fluid should serve to distinguish Garrè's disease from bone syphilis. Malignant diseases of bone can be excluded by the initial rise of temperature: absence of glandular enlargement, the infiltration of the soft parts, and the absence of cachexia and rapid loss of weight. In osteitis fibrosa, with or without formation of cysts, spontaneous fracture is the predominant symptom, the temperature is normal, and swelling and pain are not symptoms of which the patient complains. Dr. Fosdick Jones recommends that in addition to a careful X ray examination in doubtful

[1] H.M. Stationery Office. Price 2s.

[2] P. H. Reports. Sept. 30th. Washington: Government Printing Office.

[1] Journal of the American Medical Association, Sept. 24th, 1921.

cases of bone diseases, an exploratory incision should be made, and a frozen section examined at the time of the operation in order to determine the exact pathological process and to prevent unnecessary amputation. Treatment should consist in free incision of the periosteum and opening of the medullary canal.

QUALIFICATION AND COMPETENCY.

As will be seen by reference to our Parliamentary Report last week (p. 983) Sir Samuel Hoare asked the Home Secretary whether a wardress with no nursing experience had recently been placed in charge of the convicted hospital at Holloway over the heads of five trained nurses; whether this appointment was made on the advice of the Advisory Nursing Board; and the names of the personnel of that Board. To this question the Home Secretary truly replied that it was "not the case that a wardress with no nursing experience had been placed in charge of the convicted hospital at Holloway." He went on to say that the officer in question had had much nursing experience extending over a period of 17 years. He added the names of the Advisory Nursing Board, a strong body, but admitted that it had not been consulted. Probably what Sir Samuel Hoare meant to ask was whether the officer appointed was a trained and qualified nurse. The Home Secretary said: "She (the officer in question) is reported by the medical officers to be fully qualified and very capable." Had he been a doctor he would not have used the term "fully qualified," for that is generally understood as meaning that the individual in question has had full professional training and has been found qualified on examination, and not that he or she is competent. It may well be that in this case the officer is quite competent, but that does not necessarily mean that she has had full hospital training and has passed a qualifying examination. There are at Holloway five fully-trained nurses, and the hardship appears to be that an officer has been placed over them who, whatever her personal attainments may be, has not the guinea stamp conferred by examination after full training. What is the Advisory Nursing Board for, if it is not invited to advise?

LIVING SUTURES IN OPERATIVE SURGERY.

W. E. Gallie and A. B. LeMesurier have recently described[1] a most interesting series of experiments on the transplantation of fascia, aponeurosis, and tendon. The work on animals and the clinical operative procedures that have been developed have extended over a period of eight years and appear to be very conclusive. Repeating the earlier experiments of Lewis of Chicago, it was first shown that if a strip of fascia is excised completely and sewn back into position it continues to live, and after a short period of inflammatory œdema there is nothing to indicate histologically that cells or fibres are in any way changed, and their physiological value seems unaltered; this experiment gave the same result with muscle-aponeurosis and tendon, but in the tendon transplants the central part degenerated unless the transplants had been split longitudinally or freely incised to allow lymph to permeate. There is, however, no proliferation of the essential cells of the grafts, and if sutured in place by catgut they unite to their surroundings by ordinary scar tissue. The fibres of scar tissue are irregular and loosely arranged, and when subjected to strain show a constant tendency to stretch, so that the cut edges of the fascia separate widely; especially is this the case with tendon grafts. This fact explains the failure of many of the operations for cure of large herniæ by fixing fascial transplants by ordinary methods of suture, and for bridging gaps in tendons by similar means. Further experiments showed that this separation of the graft could be prevented by carefully scraping it free of all areolar tissue, scarifying it, and placing the graft in actual contact with its bed over a considerable distance by means of weaving the transplant into the edges of the gap to be filled. From this observation was developed the idea of using long strips of fascia threaded on large-eyed needles, thus converting the transplants into living sutures. The results of this method have been uniformly successful, provided the living suture at each point of puncture is firmly fixed by knotting, gaps in fascia being firmly closed by a trellis-work of living sutures and examined microscopically at intervals; at the end of six weeks the transplants were shown to be living and firm, and the condition was unchanged after 12 months, there being no widening of the gap that had been filled. The authors showed cases in sufficient numbers to prove conclusively the great clinical value of their experiments, the cases including a rupture of the ligamentum patellæ of a year's standing cured by a graft of the tendo Achillis sutured in position with the plantaris tendon, anchoring of the patella for lateral dislocation, suspension of the foot for paralytic foot-drop, closure of the gap in the capsule of the shoulder for recurrent dislocation, fixation of the trapezius to the humerus by fascial suture for deltoid paralysis, repair of injured tendons of the forearm, cure of congenital ptosis, and most important of all, the cure of 30 specially difficult cases of hernia. There were no failures; in herniæ no attempt was made to drag structures into abnormal positions, the gap being closed in each case by weaving sutures of fascia lata into the edges of the surrounding muscles and aponeuroses, stretching the living sutures across the gap just tightly enough to make them lie flat. A further paper[2] deals particularly with the implantation of tendons, and shows that wounds of tendons heal by ordinary scar tissue which, when subjected to strain, is liable to stretch or break unless it is present in considerable quantities; to unite tendon to bone it is necessary to remove all areolar membranes from the surface, and to place the tendon in contact with raw bone over a considerable distance, preferably after splitting the tendon to procure an extensive raw area; to unite tendon to tendon it is necessary to place raw surfaces in contact over a sufficient distance to ensure the required strength in the scar, and this may be done by splicing one tendon into the other. The work described has a wide practical application in large classes of cases difficult or impossible to treat with success by older methods, and it is likely therefore to prove of great value.

[1] Canadian Medical Association Journal, July, 1921.

VOLUNTARY HOSPITALS COMMISSION: EMERGENCY GRANTS TO LONDON HOSPITALS.

THE King Edward's Hospital Fund, as the Local Voluntary Hospital Committee for London, have now reported to the Hospitals Commission in regard to the situation of the London hospitals. They estimate that the aggregate deficit on the maintenance account for the year ending Dec. 31st, 1921, will amount to at least £360,000. Commenting upon this situation, the Commission states: This is less than the corresponding figure for 1920, but the gravity of the situation is shown by the fact that without exception all the larger general hospitals, including all the medical schools, will show heavy deficits. Moreover, a number of hospitals have now exhausted all their realisable assets, and without immediate assistance will have no alternative but to close beds. It is a condition of the Government grant of £500,000, which has to meet the needs not of London only but of the whole of Great Britain, that a corresponding amount must be raised by the hospitals themselves. As the total deficits for the year were estimated by Lord Cave's Committee at £1,000,000, the importance of the pound for pound rule is manifest. The Hospitals Commission have provisionally appropriated £180,000 for London, which is half the total deficits for the year as estimated by the King's Fund.

[2] American Journal of Surgery, September, 1921.

But if the London hospitals are to earn this grant they must themselves raise a similar amount. In view, however, of the fact that a number of hospitals have already, or shortly will have, exhausted their realisable assets, the Commission have decided in certain cases to make emergency grants in anticipation of the new money which will have to be raised. The total amount of the present emergency grant is £77,900, which is to be distributed as follows:—

Canning Town	£700
East London Hospital for Children	3,000
Elizabeth Garrett Anderson Hospital for Women	600
Great Northern Central Hospital	11,000
Hampstead General Hospital	3,400
Hospital for Epilepsy	850
Hospital for Sick Children	4,000
Infants' Hospital	1,000
King's College Hospital	9,000
London Temperance Hospital	2,000
Metropolitan Hospital	750
Middlesex Hospital	3,000
Mildmay Mission Hospital	400
National Hospital for the Paralysed	800
Prince of Wales's General Hospital	2,200
Queen Charlotte's Lying-in Hospital	3,000
Queen Mary's Hospital for the East End	1,000
Queen's Hospital for Children	2,100
Royal Free Hospital	12,000
Royal National Orthopædic Hospital	3,000
Royal Waterloo Hospital for Women and Children	500
Samaritan Free Hospital for Women	800
South London Hospital for Women	800
University College Hospital	12,000

These grants are in no case more than half the amount of the estimated deficits for 1921; and the Commission have not felt justified at this stage in making emergency grants to any hospitals whose realisable assets exceed their liabilities, as such hospitals, not having exhausted their credit, are not compelled to close beds immediately, but can continue their activities at any rate for the present. It will, therefore, be understood that the receipt of a substantial grant does not mean that a hospital is relieved of the necessity of appealing to the generosity of the public. On the contrary, as the grant is in no case more than half the estimated deficit, it will be seen that those hospitals which receive the largest share are precisely those which are most in need of additional revenue.

A PORTABLE DISINFECTOR.

MEDICAL officers of health in general, but particularly those in districts of large area, small population, and slender purse, will welcome any new appliance providing efficient disinfection with increased mobility and diminished cost. In rural areas in particular the types of steam disinfector at present generally available are such as to render any general scheme of disinfection for the district difficult in application. Even those forms of disinfector which are mobile to the extent of moving on wheels are often not readily capable of negotiating the small by-roads leading to the more remote farms and cottages; while the cost of moving the apparatus, or in the alternative of carrying the infected articles to the apparatus, may at the present time be a material part of the cost of disinfection. Medical officers of health faced with this problem will do well to refer to an account [1] by Dr. F. E. Wynne, M.O.H. for Sheffield, of an adaptation for municipal work of the "sack steam disinfector" used during the war by the Egyptian Expeditionary Force. The apparatus is not described in that paper in sufficient detail to be readily understood by those not familiar with its prototype, while Dr. Wynne's light-hearted reference to its principle as the "ingenious utilisation of the lightness and latent heat of steam" may be somewhat tantalising to the uninformed. The results obtained by use of the apparatus, however, appear to be sufficiently extraordinary to invite careful consideration. In the first place, it is so light and readily packed that a light model can readily be carried on a pedal-bicycle, while a heavier model can be conveyed on the back-carrier of a motor-bicycle. Then its disinfecting capacity, in view of its size, appears to be phenomenal. It is stated to be capable of effectively disinfecting 1½ tons of textile in six hours; 120 single blankets in an hour; 150 lb. of underclothing in 15 minutes; or ten suits of outer clothing in five minutes. A single suit of clothing can be disinfected, dried, and put into use again within ten minutes. This extraordinarily active disinfecting capacity is produced at a very small expenditure of oil from an oil-stove. One pint of oil, costing 3*d.* (now even less), lasts ten minutes. The cost of the oil for disinfecting one set of clothing would be 3*d.*; 30 blankets, 7½*d.*; a ton of textiles, 7*s.*—these are the figures as given by Dr. Wynne. The capital cost of the whole apparatus is stated to be very small in comparison with that of the most modest of the ordinary steam disinfectors now in general use. It is clear that if this apparatus makes good—and the tenor of the article in question suggests that it can already be considered as having done so—then Dr. Wynne will be fully justified in referring to it as an invention revolutionising the practice of disinfection. We commend his article to the consideration of all concerned with the practical problems of disinfection.

[1] The Medical Officer, Oct. 8th.

A CASE OF DEATH AFTER VACCINATION.

A CASE of death following vaccination was before Dr. S. Ingleby Oddie, coroner for Westminster City and Liberty, on Oct. 28th. The deceased was a female child aged 4 months, daughter of a corporal in the R.A.M.C. She was vaccinated on Sept. 27th, at the Rochester Row Military Hospital, where the medical officer cleaned the skin thoroughly, smeared on Government vaccine, and scratched through it with a sterile needle. The vaccination was done on the leg and the place was protected by a shield. The child, however, kicked off the shield on the second day. The leg becoming troublesome, the child was taken daily to the Military Hospital, and on Oct. 11th was admitted to St. George's Hospital, where she died on Oct. 27th. The lymph came from the Government establishment and at least a dozen other children were vaccinated from the batch, no other case going wrong. A fresh tube was used for this child. The house surgeon at St. George's Hospital reported that on admission the child was suffering from cellulitis of the right leg, apparently originating from three vaccination wounds in the calf. The cellulitis steadily spread up the thigh and buttock and by the fourth day had assumed definite characteristics of erysipelas with a well-defined red edge to the inflammatory area. The inflammation spread to the other leg, the back, chest, abdomen, and arm. The patient's general condition was comparatively good until the 25th, when signs of toxæmia became more evident. There was a little diarrhœa on the 23rd. Anti-streptococcal serum was given, 70 c.cm. in all, along with stimulants and subcutaneous saline injections. The cause of death was stated to be toxæmia following erysipelas associated with a vaccination wound, and Dr. Oddie recorded a verdict to that effect, adding that the vaccination had been properly carried out and that death was due to misadventure.

REFLEX MECHANISM OF LUMBAGO AND SCIATICA.

THE theory that lumbago and certain other forms of backache, as well as such a closely allied condition as sciatica, are to be regarded as reflex neuralgias, like the trigeminal neuralgia due to dental caries, finds considerable support in recent investigations carried out by Dr. Folke Lindstedt [1] of Stockholm. He argues that if this group of diseases is to be regarded as the result of various reflexes, painful and otherwise, and not as strictly local phenomena, then they should be far more common in persons with a neurotic constitution and with morbid conditions of the bones and soft tissues, than in healthy persons. To put this

[1] Acta. Med. Scand., 1921, vol. lv., Nr. 3.

theory to the test of figures, he examined 1578 recruits, and he classified them according as they were perfectly healthy or subject to serious or slight morbid conditions. By "serious morbid conditions" he means practically every disease which may affect the lower half of the body, and his long list includes marked deformities of the spine, appendicitis, hernia, varicocele, traumatic and other diseases of the hip and knee, genu valgum, varum and recurvatum, severe flat-foot, hallux valgus, persistent or relapsing polyarthritis, varicose veins, and general static weakness. By "slight morbid conditions" he means similar but less serious divergences from the normal. He inquired of each recruit as to the occurrence, past or present, of sciatica, lumbago, and other forms of backache, and found that in 117 cases, or 7·4 per cent., the object of the inquiry had suffered from lumbago. But while this was the case in as high a proportion as 24·5 per cent. of the recruits in the category "serious morbid conditions," only 1·7 per cent. of the healthy recruits had suffered from lumbago. In other words, lumbago was 14 times more common among recruits suffering from one or more of the diseases referred to than in perfectly healthy recruits. The incidence of lumbago among recruits in the intermediate category suffering from minor ailments was 6·1 per cent. Similar figures were obtained in the case of sciatica, the incidence of which was as high as 3·46 per cent. in recruits subject to "a serious morbid condition," and only 0·12 per cent. in healthy recruits. Dr. Lindstedt is so impressed by the importance of this reflex mechanism in the provocation of lumbago that he suspects this mechanism to have played a part even in the 15 cases of lumbago found among healthy recruits. Their freedom from any morbid process capable of exciting a reflex lumbago was, he thinks, probably more apparent than real, and such a condition as spina bifida occulta is apt to be overlooked, although its capacity for exciting reflex disturbances cannot be ignored. If Dr. Lindstedt's conclusions are correct, a valuable clue to the successful treatment of lumbago and allied diseases is indicated, and in attempting to cure them the physician will extend his activities to comparatively distant parts of the body.

LIFE INSURANCE IN THE TROPICS.

AT the first sessional meeting of the Royal Society of Tropical Medicine and Hygiene, which we briefly reported in our issue of Oct. 29th, Sir James Cantlie and others discussed the subject of life insurance in the tropics. It was pointed out that conditions of life in hot climates had recently greatly improved, that it was unjust in many cases for insurance companies to add a substantial percentage to the ordinary premiums simply because the party insuring resided within certain zones. That life in tropical and hitherto unhealthy countries has greatly improved both in comfort and freedom from risks is certain, and for this many factors are responsible. The most important, it would appear to us, is the greater knowledge of how the maladies peculiar to the warm countries are spread, an outcome of the advance in medical knowledge during the last quarter of a century. Apart from this, the motor-car and the electric fan exert an influence that it is hard to estimate in percentages, but is none the less real. A medical officer of a large town in India, who had some 29 years to his credit, once remarked that the hot weather had no terrors for him now as, thanks to the fan, he could always sleep at night and could go about in comfort in his car during the day. It is impossible for anybody who does not remember India in the pre-fan and pre-motor days fully to appreciate the force of this remark. As was pointed out by the speakers during the discussion, insurance companies are in the hands of their actuaries, and actuaries deal with figures, which are presumably founded on facts. Those responsible for fixing premiums have, in most cases, never been to the tropics and are not medical men. In the annual Government reports vital statistics affecting Europeans are necessarily brief and perfunctory; the native returns are more fully discussed and these reports are much too long as it is. Hence, owing to lack of exact data and the need of insurance companies to play for safety, an addition of 2, 3, or 5 per cent. is made to the ordinary premium, which in many instances is quite unjustifiable. Insurance companies who wish to deal fairly by the European resident abroad would do well to appoint expert advisers in tropical conditions, even if the numbers insured would hardly for the moment justify the expense incurred. American companies appear to be better informed as to health conditions in hot climates, and have a much more flexible system of working. During the discussion it came out that the first five years of the colonist's residence were still regarded as the danger period, Sir Leonard Rogers remarking that even this assumption was now largely untrue owing to the effect of antityphoid inoculation. Apart from the enteric fevers, the risk of death is not greater at this period than at any other. The European's power of resistance is never so high as when he has just left England.

MOTOR EXHAUST GAS IN CONFINED SPACES.

A REPORT of considerable interest to the users of motor-cars appears in recent issues of the *Journal of Industrial Hygiene*, based upon an investigation made by Y. Henderson, H. W. Haggard, M. C. Teague, A. L. Prince, and R. M. Wunderlich, undertaken to determine the limits of safety of ventilation in the projected tunnel under the Hudson river between New York and Jersey City. The tunnel is to be 1100 yards long between ventilating shafts on the two sides of the river, and 2830 yards from portal to portal; it is to be used for motor traffic, and danger arises from carbon monoxide given off in exhaust gas. Exhaust gas contains on an average 6 per cent.—i.e., 600 parts per 10,000, of carbon monoxide. This gas is stated to be the only considerable toxic constituent from gasoline, but exhaust gas from coal distillate (benzol) contains accessory toxic substances. The problem of the research was to ascertain what percentage of carbon monoxide could be permitted for an exposure of 45 minutes, the maximum period likely to be occupied by the slowest vehicle in traversing the tunnel, a period during which no energetic exercise would be taken. Incidentally attention is drawn to the danger from which fatalities have resulted arising in small garages, or to a man crawling under a car when its engine is running, or when the engine of a car standing ahead is "idling." Under such conditions slight headaches are frequent, while severe headaches, nausea, and emotional disturbances up to hysterical mirth, anger, or grief, or even maniacal manifestations, are not very unusual. Several cases of severe poisoning from exhaust gas have been recorded [1] in our own columns. In the American investigation a large number of experiments, in which individuals were exposed in a chamber to atmospheres containing varying amounts of carbon monoxide, were carried out to determine the rates at which this gas, at different concentrations, is absorbed and subsequently eliminated. The results showed that after one hour's exposure at rest, the concentration of carbon monoxide in the blood reached approximately half what would be reached by indefinite exposure, but that by doubling the volume of breathing through exercise this concentration might be reached in half an hour. Elimination in fresh air was found to take place at the rate of 30 to 50 per cent. per hour. The conclusion is arrived at, for passengers with an exposure of 45 minutes in the tunnel, that complete safety and an assurance of freedom from disagreeable effects can be obtained if the carbon monoxide content does not exceed four parts per 10,000. General standards are also given. When the time in hours multiplied by the concen-

[1] THE LANCET, 1920, i., 1334.

tration of carbon monoxide in parts per 10,000 of air equals three, there is no perceptible physiological effect. When it equals six there is just a perceptible effect. When it equals nine headache and nausea are induced. When it equals 15 or more the conditions are dangerous to life.

INTRAVENOUS COPPER IN TUBERCLE.

MANY investigators, especially in Japan, have, in the treatment of human and animal tuberculosis, found advantage in using cyanides and copper salts, copper salts apparently stimulating the growth of fibrous tissue, while cyanides are better tolerated than other copper salts and do not coagulate albumin. In the *Annali di Medicina Navale* for August, Prof. E. Trocello, of the Royal Italian Navy, reports experiments he has made on the cure of tuberculosis in guinea-pigs by the intravenous injection of "cuprocian," a double cyanide of copper and potassium. Prof. Trocello inoculated guinea-pigs with virulent tubercle bacilli in the thigh, and, two or three weeks later, when it was clear that infection had occurred, he began to administer the salt. Its lethal dose is 3 milligrammes per kilo of guinea-pig: his curative dose was 1 or 2 mgm. per kilo every three or four days. Of eight animals, five died of general tuberculosis, three others survived four, seven, and seven and a half months. The weight of those which survived so long increased for a month or more after the injections (subcutaneous) were begun, and the ulcer or sinus which had formed at the seat of inoculation healed in two cases. No tubercle bacilli could be found after death in the bodies of these three, either by histological examination or by inoculation. The inguinal glands were always enlarged before the treatment was begun, and only in these glands could giant cells be found (nowhere else in the body), and even here there was no caseation. Tubercle formation was not observed in any other organ or tissue. There was greatly increased formation of fibrous tissue, particularly noticeable in the other lymph glands; and the spleen, which, in the tuberculosis of guinea-pigs, usually increased to two or three times the normal weight, was here reduced in size by a half and was cirrhosed and hard. Some small areas in the lungs that might have been taken for tubercles contained no lymphoid cells, but only epithelial cells with deeply staining nuclei and no caseation. These appearances are not due to the cuprocyanate itself but to its influence on the tuberculous infective process, whose noxa, the living tubercle bacillus, is killed, and the life of the infected guinea-pig is thereby prolonged. Prof. Trocello is proceeding with further researches on the precise meaning of these observations, in the hope of eliciting information of value in the treatment of tuberculosis in man.

RUDOLF VIRCHOW.

PROFESSORS of pathology are not in the list of professors of medicine and the allied sciences who are allowed by law to sign certificates under the Cruelty to Animals Act, 39 and 40 Vict. c. 77, for the exemption from its provisions of experiments made on living animals for the discovery of new knowledge. It is often supposed that their exclusion was due to a suspicion that they were too deeply involved and interested to be trusted; in fact, they were left out because in 1877 they did not exist. And now we are reminded that it is only 100 years since the father of modern pathology was born, and many will remember that it is but 19 years since that he died. It was Virchow's great achievement in biology to conceive—and his still greater achievement to convince the world—that the cells of the body are one thing and the intercellular substances another, that cells arise from cells and not from unorganised fluids, and that the processes of pathology are fundamentally cellular processes. It is difficult for us to grasp clearly what this must have meant, because we cannot really visualise a time when cells and lymph were thought to be interchangeable and when the histological arrangements of the body were not much clearer than the Yorkshireman's summary of the anatomy of slugs, "just moosh." The fertility of the Cellularpathologie has been of something like the same order as that of the Origin of Species, published a year later. The ideas of both have become so incorporated in our common daily thought that we are apt to forget that they were ever found out as something new. And if in recent years Virchow's concept of the body as a congeries of cells has to some extent receded, it has done so only by forming a sure foundation for a superstructure in which organs and organisms are the effective units rather than their component bricks. Virchow began to teach us how to understand the "body as a whole" by taking it to pieces; may the synthesis which is now reared on his analysis prove as well grounded and enduring.

STILLBIRTH, ITS PREVENTION.

THE importance of adequate antenatal supervision is now well recognised by all those concerned in the administration of large lying-in clinics. Unfortunately, the means available for carrying out such supervision are largely inadequate. Most of the accidents and toxæmias of pregnancy and childbirth can be prevented if only the pregnant woman is properly safeguarded during her pregnancy, and such care is even more important than that actually exercised at the time of her confinement. At the present day, when so much attention is being paid to the welfare of the new-born child, there is some danger of the even greater necessity for the care of the child before it is born being overlooked. Antenatal clinics are still few and far between, and it is probable that a very small percentage only of pregnant women consult their medical attendant before the birth of their child, and even when they do so, only too often no steps are taken to watch and supervise their health during the whole of this important period. In a well-conducted lying-in clinic every woman who applies for admission to the clinic for her confinement is seen and examined during her pregnancy, but even in these favourable circumstances many women will not attend as they ought, or only do so when they feel ill. Such neglect is the main cause not only of most of the accidents of childbirth, but even to a greater extent of the toxæmias of pregnancy and parturition with their attendant dangers. If we must confess that even in properly conducted clinics many women escape the care and attention which they should all receive during their pregnancy, how much greater is the failure in this respect in ordinary practice. In a paper which is published in the current issue of the *Edinburgh Medical Journal*, on stillbirth its causes and prevention, Dr. F. J. Browne has shown clearly that a very large percentage of stillbirths and neonatal deaths could be prevented by adequate antenatal supervision. Deaths, for example, from such causes as craniotomy, asphyxia, and cerebral hæmorrhage as a result of difficult breech and forceps deliveries are all preventable, and the conditions giving rise to them are readily recognisable by the medical attendant, if the patient is only properly examined before her confinement. It must be remembered that in many of these cases the fatal result is due to disproportion between the fœtus and the pelvic canal, and that the child is often particularly well nourished and before birth quite healthy; it is precisely the fact that the child is large and well developed that leads to the extra danger to its life. In the same way the recognition and treatment of syphilis, so potent a cause of stillbirth, is easily carried out if the patient comes under observation during her pregnancy, and the results that have been obtained show that healthy children may certainly be born if treatment is carried out on modern lines. The real danger to the child's life arises from the fact that only too often the women do not come under observation until the time of their delivery, when prevention is impossible and treatment is too late. To remedy this Dr. Browne pleads for the compulsory, or better, the voluntary notification of the pregnancy of every expectant mother. With

this view we substantially agree if it is necessary to safeguard the health of the child from its birth up to and during its school age; it is equally important to ensure that it shall not be handicapped at birth or even lose its life for want of proper supervision of its mother during her pregnancy. Child welfare centres are undoubtedly doing a very good work, but their utility would be increased, and a large number of lives of new-born infants would be saved, if proper antenatal centres were established in close association with them all over the country, and if some means were devised, such as the notification of pregnancy, to ensure that no expectant mother should lack careful supervision and treatment during the whole of her pregnancy.

THE BRUSSELS MEDICAL DEGREE.

FOR the last 40 years the University of Brussels has granted an M.D. degree to those already holding British and Colonial medical diplomas. For this degree, which did not entitle its possessor to practise medicine in Belgium, no course of study or residence was required, and only a single examination in final medical subjects, largely of an oral nature, was demanded. The degree was popular in the eighties and nineties with those who, for one reason or another, were on the British Medical Register without obtaining a university degree in medicine. This examination, in abeyance during the war, was formally discontinued after the armistice under the circumstances narrated in THE LANCET of July 23rd by Dr. Arthur Haydon as Hon. Sec. of the Brussels Medical Graduates' Association. Dr. Haydon now sends us for publication a copy of a letter received by him from the Foreign Office.

Foreign Office, S.W. 1, 10th October, 1921.

SIR,—With reference to the letter from this Department No. W7278/4161/4 of the 9th of July last, I am directed by the Marquess Curzon of Kedleston to inform you that His Majesty's Ambassador at Brussels has received a note from the Minister for Foreign Affairs stating that no privilege has been withdrawn from British and Colonial students who have obtained a degree of M.D. at the Free University of Brussels.

As regards the future, the University authorities have decided, in order to promote the relations of the University with foreign countries, that all foreign students should be called upon to fulfil the same regulations; and that they therefore cannot concede special privileges to British and Colonial students.

The latter may still enter their names at the University under the conditions laid down on page 13 of the *Réglement Organique* and on page 2 of the *Réglement pour la Collation des Grades Scientifiques*, both of which documents are enclosed herewith.—I am, Sir, your obedient servant,

R. H. CAMPBELL.

Quite apart from the granting of this Brussels M.D. to foreigners, owing to the special circumstances of the war reciprocity was set up in 1915 between Belgium and this country whereby, under Part II. of the Medical Act, 1886, Belgian medical graduates were entitled to a place in the foreign section of the British Medical Register, and 60 or more Belgian medical graduates actually availed themselves of this privilege. Similarly, an English medical graduate became entitled to practise medicine in Belgium without other formality than registration. As was pointed out in the Students' Number of THE LANCET, this reciprocity came to an end in December, 1920, and from the wording of the letter cited above it appears that the holders of British medical diplomas will no longer be entitled to any preferential treatment in regard to Belgian medical qualification or registration.

The next session of the General Council of Medical Education and Registration will commence at 2 P.M., on Tuesday, Nov. 22nd, when Sir Donald MacAlister, the President, will take the chair.

Sir George Joseph Hamilton Evatt, K.C.B., who founded the R.A.M.C. Volunteers in conjunction with Sir James Cantlie, and who had done much for reform and efficiency in the medical organisation of the army, died in London on Nov. 5th, aged 77.

MODERN FOOTWEAR AS A CAUSE OF FATIGUE, MUSCULAR RHEUMATISM, AND FLAT-FOOT.

WITH NOTES ON AN IMPROVED TYPE OF BOOT.

BY S. D. FAIRWEATHER, M.B., CH.B. ABERD.

THE arch of the normal human foot may be compared to the semi-elliptical spring employed in motor-chassis construction; the body-weight, however, does not rest constantly upon the crown of the arch or spring, but is thrown on it only when the resistance of the arch is required to deaden any jar or shock thrown on the foot. The arch, which rests on three points, the heel, the ball of the foot, and the fifth metatarsal bone, is supported by the plantar ligaments and fascia, assisted by the ligamentous action of the various muscles—tibiales anticus and posticus, the long and short flexors of the toes, abductor hallucis, and the small muscles of the sole of the foot. Of these muscles, tibialis anticus acts on the whole arch from above, lifting it as one lifts a bunch of keys by a ring, ensuring that the antero-posterior arch will act in the proper plane, and preventing rotation of the arch around its long axis. The peroneus longus braces up the transverse arch diagonally, but if unopposed by a properly developed tibialis anticus it tends to pull down the antero-posterior arch. Flat-foot accompanied by spasm of the peroneus longus corroborates this point.

The *spring* of the human foot does not depend so much on the curvature and thickness of the arch as on the quality (strength, contractibility, and relaxability) of the muscles which support it, just as the efficiency of a metal spring depends not on the curvature and section alone, but on its flexibility and strength. While, however, the height of the arch is no true criterion of efficiency—otherwise pes cavus would be the ideal foot—and a long foot with a comparatively low arch *may* be quite efficient, the ideal arch should be fairly high in order to obviate the necessity for the excessive contraction of the supporting muscles, which must take place before they can resist any strain thrown upon the foot, and which is unnecessary if the muscles and tendons are of the proper length. The height of the arch should be measured from the head of the astragalus to the ground whilst the subject is standing erect on one foot. A great muscular development under the arch partly fills up the concavity and makes the bony framework appear lower than it really is. The present method of testing for flat-foot—i.e., asking the patient to stand on tip-toe—is no criterion of the efficiency of the arch except in cases in which the bones are ankylosed. Most of the work of rising on tip-toe is done by the gastrocnemius and soleus, the tibialis posticus and peroneus longus helping the calf muscles to maintain this posture. The efficiency of the arch can best be gauged by marking the tubercle of the scaphoid while the subject stands on one foot, the tubercle being then allowed to sink as near the ground as possible and then elevated by contracting the tibiales and all the plantar flexors. Measuring the distance the scaphoid has moved and multiplying by the weight of the person will give the efficiency of the arch.

Modern Footwear.

In a normal barefooted white man the body-weight when standing falls opposite the heel—i.e., on the posterior pier of the arch which is more vertical, more rigid, and shorter than the anterior—and not on the crown of the arch; the balance of the body being so perfect that only a minimum of effort is required to keep erect. When the heels are raised even a quarter of an inch from the ground the centre of gravity is thrown forward, the plumb-line falling opposite the crown of the arch or even farther forward, according to the height of the heel from the ground. (Figs. 1 and 2.)

In healthy feet the higher the internal malleolus is naturally from the ground the easier it is for the internal malleolar group of muscles to do their work, getting as they do a straighter pull than when the malleolus is low down; and, conversely, the nearer it is to the ground the greater is the work required of these muscles. Artificially raised heels might, therefore, be expected to make the work easier, and this would doubtless be so were it not that the centre of gravity is thus thrown forwards, giving the muscles too much *constant* work. Even with a moderate—e.g., a three-quarter inch—heel a plumb line falls not opposite the sustentaculum tali, but opposite the head of the astragalus, throwing a constant strain upon the inferior calcaneo-clavicular ligament and the tendon of tibialis posticus; to relieve this strain the feet are usually instinctively splayed. Correct alignment is as necessary in a walking machine as in any other mechanism if one is to secure efficiency and durability, and the nearer the toes are kept to the middle line (the line of progression) the greater is the economy of power. When the habit of walking with splayed feet becomes established, propulsion in walking is done by the outer half of the gastrocnemius and by the peronei, dorsiflexion (if any) being effected by the extensors of the four smaller toes and the peroneus brevis and tertius. The tibiales and the flexors of the big toe then get practically no exercise and become relatively longer and weaker than the evertors, propulsion thus being effected by the muscles which raise the outer side of the foot and tend to flatten the arch. Teachers of dancing, gymnastics, and physical culture to this day almost invariably teach their pupils to stand with their feet splayed, quite oblivious of the evil effects. In the army also men are trained to stand "at ease" with the feet at an angle of 45°, the weight of their bodies and equipment being equally divided between their heels and toes—that is, resting on the arch. No wonder then that at least 90 per cent. of the temporary army were more or less flat-footed. The mere act of separating the big toes from each other tends to lower the arch of a weak foot, as the invertors of the foot are idle and the evertors in a favourable position for contracting. Also, the weight is thrown relatively further inward and forward on the arch than when the big toes are kept parallel. Abduction of the big toe from the other toes helps to raise the arch, but in most boots this is prevented by the snow-plough shape of the front of the boot pushing the big toe outwards. No appliance can cure hallux valgus whilst such boots are worn. Training, raised heels, and badly shaped toes of boots thus encourage men to stand with feet splayed and in course of time to walk in the same way, with the result that the muscles capable of making the arch strong and elastic are prevented or discouraged from acting effectively.

Strain Resulting from Wearing Heeled Boots.

A man wearing heeled boots stands on a slope, the gradient of which depends on the height of the boot heel and the length of the arch. If the body and legs were not furnished with joints he would resemble the tower of Pisa, but up till old age muscular action to some extent corrects the tilting, and enables strong persons to preserve a fairly erect carriage, the back muscles, and the extensors of thigh, leg, and foot unconsciously coming into action. When a soldier stands at "attention" all these muscles are in contraction to an extreme degree. The civilian is content with a milder effort, and although these muscles are contracted, there is a perceptible bending of the knees, the joint never being completely extended, and the capsule and lateral ligaments constantly stretched, accounting possibly for the frequent complaints of weak knees and easily displaced cartilages; there is a forward bending of the head; the lumbar curve is somewhat flattened; the feet generally splayed; and there is a slight stoop of the shoulders and a corresponding partial contraction of his chest. These faults disappear while exercising in a gymnasium, returning as soon as boots are resumed. The compensatory flexion of the knees is concealed by the clothing, but may be observed in the bare knees of schoolboys and of men wearing kilts, and in theatrical women wearing tights. The tibia is then inclined slightly forwards, and the leg cannot be maintained in this position without wasting neuro-muscular energy. The exhaustion and even pain caused by the continuous contraction of the calf muscles and peroneus longus when heeled boots are worn may be relieved by discarding boot heels, thus relaxing the muscles, the operation of excising part of the peroneus longus tendon being quite unnecessary. That white men's calf muscles are "muscle-bound" is shown by the fact that if a soldier's feet be examined when he is lying on his side his toes are invariably pointing downwards, the foot being at an obtuse angle to the leg, instead of at right angles as it would be if all the leg muscles were relaxed, and as it is seen in an infant. Gray and Cunningham both state that in the erect position the foot is at right angles to the leg. This, I contend, is the natural angle of the foot also when resting, the extension of the foot being caused by the tone of the calf muscles being greater than that of the dorsiflexors. Boot heels, by causing the calf muscles to be "muscle-bound," are responsible for the belief that extension is the normal position of the foot when at rest, the point being of some practical importance in fracture of the tibia, where the unrelaxed calf muscles tend to cause over-riding of the broken ends of the bone.

The average height of the heel of a man's boot is three-quarters of an inch, and this is sufficient to throw a man's head 9 in. off the vertical if he is 5 ft. 7 in. in height. If he weighs 11 stone, the weight required to pull him back to the vertical position is 56 lb. This may be verified roughly by using a log of wood of this height and weight with a base of the same width as the arch of the foot (6 in.), tilting it by a block three-quarters of an inch thick and attaching a rope and weight led over a pulley. A soldier has also his equipment (say 60 lb.) to support, in addition to the 56 lb. mentioned above, thus doubling the weight he is supposed to carry. No matter how he distributes the equipment around his body, he has to exert a constant effort to resist the 116 lb. pulling him downwards and forwards which would not be the case if his boots were heelless. This is doubtless one factor in the ætiology of soldier's heart, as even a healthy heart is not always equal to the strain. Indeed, without suggesting that boot heels cause all the troubles that flesh is heir to, it is quite possible that they are a factor in the causation of many conditions due to fatigue and nervous exhaustion. Much of the physical incapacity in persons over 50 years of age which is attributed to "old age," rheumatism, and sciatica arises from the strain on their musculature caused by the constant wearing of heeled boots.

It is obvious that the higher the heel the greater is the muscular effort necessary for the maintenance of the erect position. The head of a woman of 5 ft. 6 in. with an arch 6 in. wide is thrown 2 ft. off the perpendicular when she wears a 2 in. heel, thus entailing a great strain on the muscles of the back and necessitating the use of corsets. A person wearing very high heels becomes practically digitigrade, the weight being transmitted from the tibia vertically down the tarsus and metatarsus, falling not on the crown of the arch but vertically down the anterior pier. Although in this position there may appear to be quite a good arch, the feet are in many cases quite flat from weakness of the invertors and plantar flexors, and persons accustomed to the wearing of such heels are useless at long-distance walking, quick walking, or at any test of strength of the arch, such as leaping. The average woman gets no spring from the arch of the foot, being content with a lateral wobble of the ankle and rotation of the foot around its long axis instead of the natural springy heel-and-toe action. Any elasticity she gets is from flexion and extension at the knee, her feet being no more springy than blocks of wood. Using the knees in this way involves a much greater expenditure of energy than when the spring is derived from

the action of the arch of the foot, and the movement produces a much less graceful effect as the muscles employed are larger and less capable of fine movements.

It is noteworthy that an exceptional proportion of the prize-winners in jumping competitions at Highland games are tailors, the reason being that these men when at work sit in a squatting position with the feet well inverted. In spite of indoor life and lack of exercise the average tailor is more agile than other men, as the arch is spared the work of supporting his weight all day, and his muscles, being idle, remain

FIG. 1. FIG. 2.

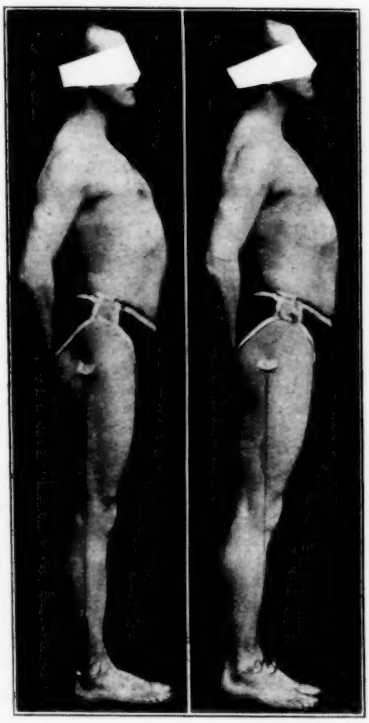


FIG. 1.—The muscles are equally relaxed and a minimum of energy is required to stand erect with the heels on the ground. The photograph was taken after wearing heelless boots for two years. The foot is quite altered in shape, the heel not projecting behind the leg as it formerly did. The plumb-line falls from a point vertically below the centre of gravity—i.e., the last lumbar vertebra, as nearly as could be judged.

FIG. 2.—The back muscles, quadriceps, glutei, and calf muscles are contracted by conscious effort to retain the erect posture; even then the latter is not so good as in Fig. 1. The weight of the body is thrown on the spring ligament and internal malleolar group of muscles, to relieve which, when these muscles are weak or tired, people separate their feet in front. They then tend to walk with the feet everted, and the peronei do more of the work in walking than they should: there is thus a dragging down of the arch. Moreover, the tibialis anticus is elongated and weakened.

elastic. Sedentary people in general—e.g., clerks and students—are more agile than men who stand much, such as policemen and tram-drivers.

*The Heelless Boot.**

To prevent and cure flat-foot and the other evil effects of heels, the boots should be so constructed that the metatarso-phalangeal joint of the big toe, all the toes, the outer side of the sole, and the heel shall rest on one place parallel to the ground. Under the arch of the foot the sole should be curved with the convexity upwards and should be fairly flexible. The leather sole, which could be reinforced by spring steel from the heel to the ball of the big toe, should conform to the natural shape of the foot, and the heel and sole must be of the same thickness. The inner edge of the boot should be straight, as in American boots. Ample room should be allowed for flexion of the toes. The arching of the sole is not essential to cure flat-foot, but it looks better and allows the boot to be laced more firmly, thus compensating for the loss of muscular sense that occurs in a foot when any sort of footwear is used. Lacing the ordinary boot tightly pulls down the crown of the arch towards the flat sole which, being rigid, cannot fit into the arch. The ideal boot as described is practically a close-fitting, pliable covering of leather, supporting without immobilising or hampering the structures in the arch and ankle, the waist of the boot acting like an artificial annular ligament, bracing up the strained fascia and ligaments under the arch. (Fig. 3.)

FIG. 3.

"Heelless boot," showing heel and sole of same thickness, arched sole, and no curling up of toe.

FIG. 4.

To show development of tibialis anticus. When heels are worn this muscle is rarely as well developed as the calf muscles and peronei.

With heelless boots the carriage is erect and easy, and the improvement in balance is very marked when turning round, golfing, waltzing, &c. It is noticeable that footwear used for boxing, wrestling, tennis, athletics, and gymnastics, all of which exercises call for a maximum of strength, speed, and accuracy of footwork, is generally made with little or no heel. Owing to the os calcis resuming its natural relation to the ground, the calf muscles have a greater range of contraction, and this is shown by increase of power in high jumping and walking uphill. There is also a greater sense of firmness in the knees and ankles when standing, as also greater agility and quickness of foot work. In walking the feet should be kept parallel and a gliding movement of legs and feet adopted, the "steam-hammer" method of putting the feet to the ground being abandoned. The knee should scarcely be flexed and must not be raised, each foot being dorsiflexed in passing the other. Walking from the hip-joint and ankle should be cultivated, knee-joint action being only slightly required in correct walking.

* Very satisfactory boots and shoes of this type are supplied by Messrs. James Lorimer and Son, Aberdeen.

On first dispensing with boot heels walking is not quite pleasant owing to the spastic or muscle-bound condition of the calf muscles and the relative weakness of tibialis anticus, but as the latter recovers tone and peroneus longus and the calf muscles relax, the muscular balance is gradually restored. (Fig. 4.) Soon the legs get straighter at the knees, the figure becomes more erect, the shoulders and head resume their natural position, the chest measurement gets larger and breathing easier, the back muscles get less spastic and the abdomen flatter, the foot gets shorter and more shapely from raising of the arch, the tendency to eversion disappears, walking becomes a pleasure, and health, strength, and stamina improve. Immediate good results from discarding heels should not, however, be expected, muscles which have been in more or less continuous contraction for years being, of course, incapable of relaxing the instant the strain is removed.

Nurses suffering from flat-foot are usually advised to abandon high heels; but changing to lower heels does them no good, what is required being no heels. A person wearing a heelless boot can tolerate a much thicker sole than he would in an ordinary boot, the movement in walking in the former being quite different from the modern artificial walk.

Remedies for Flat-foot.

Many of the remedies hitherto employed are useless, among them being (*a*) arch supports in heeled boots, which are usually either too strong to be flexible or not strong enough for the constant weight of the body; (*b*) raising the inner side of the sole and heel, which is only a palliative and not a cure; (*c*) standing tip-toe exercises and cycling, both of which are injurious as they develop the calf muscles and peronei longi which are invariably relatively too well-developed already, and do not sufficiently exercise tibialis anticus. In cycling, dorsiflexion of the ankle being done chiefly by the descent of the opposite pedal, tibialis anticus does not require to contract actively. Tip-toe exercises with the heels separated and big toes touching also fail, as abducting the heels is not equivalent to inverting completely the feet (abduction of the heels being done from the hip-joint), and rising on the toes in this position does not exercise the tibialis anticus, which is relaxed instead of contracted during the movement. In standing tip-toe exercises most of the work is done by the gastrocnemius and soleus, the other muscles of the leg unaided being incapable of raising the body to the tip-toe position as they act round corners (the malleoli). After the calf muscles have initiated the movement, the tendons passing under the malleoli come into play, and, when on tip-toe, help to preserve this posture. The exercise is unnecessary, as the same movement takes place in spurning the ground in walking, with the advantage in the latter case that during the contraction of the muscles of the propelling leg the weight is for the moment on the other foot. In heelless boots the movement starts from the ground, and the calf muscles have therefore a greater range of contraction, so that the tibialis posticus group have a longer time to get into action. Also in walking the flexor longus hallucis gets a chance of complete contraction, whereas in tip-toe exercise the sole of the big toe is on the ground and remains more extended than flexed.

What is required then is to exercise the arch supporters independently of the peronei and calf muscles, the three essential exercises in addition to correct walking as already described being (1) dorsiflexion, (2) plantar flexion, (3) inversion. Unless, however, boot heels are permanently discarded, perfect feet cannot be expected from these or any other exercises.

1. Dorsiflex the inverted foot, helping with hand if necessary, and getting someone to pull down the heel if the calf muscles cannot relax voluntarily.

2. Plantar flexion should be performed with the inverted foot (*a*) flexed and (*b*) extended, an attempt being made to close the foot like a fist. After thorough contraction, relax all the plantar flexors completely, and repeat contraction and relaxation alternately, concentrating the attention on the process. This exercise should be done with the foot in the extended position only when the patient has intelligence and power enough to keep the gastrocnemius and soleus relaxed.

3. Invert the foot completely, with foot extended and flexed respectively. Relax. Repeat.

Other useful exercises are: 4. Walking on the outer side of the feet and lifting each foot to cross the other at each step. 5. Lifting gradually increased weights with the inverted foot. 6. Circumduction of the foot from without inwards—i.e., invert, dorsiflex, extend. Relax always after each completed movement in every exercise. 7. Separate big toe from the others. Adduct it. Relax. Repeat. 8. Sitting on chair extend knees to the utmost, dorsiflexing the feet at the same time. Relax. Repeat. 9. Standing on heels and outer sides of feet, toes off the ground, lean back as far as possible. 10. Walking in boots the soles of which are thicker than the heels. Old boots with heels removed and soles thickened are useful for this exercise. Passive movements, massage, and electricity are all useful adjuncts, but none is essential. Where, however, adhesions or ankyloses exist, they should be broken down before starting treatment.

MEDICINE AND THE LAW.

The Legal Aspects of the Case of Harold Jones.

AT the Monmouthshire Assizes on Nov. 1st Harold Jones, a boy 15 years of age, pleaded guilty to the murder of a little girl named Florence Little at Abertillery on July 18th. The information given to Mr. Justice Roche before sentence was passed included the reading of two confessions by Harold Jones, one containing details of the killing of Florence Little, the other admitting the murder of another child, Freda Burnell, on Feb. 5th. Jones had been tried and acquitted of the murder of Freda Burnell, his defence having been publicly subscribed for, and he had been welcomed back to his home by applauding crowds of neighbours. To this the judge referred as having probably fostered the boy's vanity and made him more ready to commit his second crime. The case has many features of medical interest, while the details have appeared so recently in the press that they need no repetition. The plea of guilty followed by a sentence of detention during His Majesty's pleasure calls attention to Section 103 of the Children Act, 1908, which provides that "Sentence of death shall not be pronounced against a child" (under 14) "or young person" (between 14 and 16), but that he shall be sentenced as above and detained "in such place and under such conditions as the Secretary of State may direct and whilst so detained shall be deemed to be in legal custody." It is remarkable that the section makes no reference to the age of the young person at the time of the commission of his crime. Counsel for the defence alluded to this in urging the acceptance of the plea of guilty. His argument that Harold Jones might have had to be tried as an adult murderer, if through his pleading not guilty his trial had taken place next January, when he would have been 16 years of age, is liable to the comment that such postponement would hardly have been necessary, even if a later date had been fixed for the trial, owing to the defence not being ready. It points, however, to what is sufficiently obvious, that if Harold Jones had been brought to trial after his sixteenth birthday, it would have been the duty of those defending him to do what they could to prove an abnormal mental condition affecting him, and to obtain a verdict of "guilty but insane." It is almost equally clear that this defence could not have succeeded under the rules of law governing such verdicts. A boy of 15 who has killed in close succession two young girls must be regarded by most people as suffering from "disease of the mind." There was, in addition, a statement that in one of his pockets seven women's handkerchiefs were found, an indication pointing to a sexual element

in his abnormality. Before, however, a person indicted for murder can be found to have been insane at the time of the action it must be proved that at that time he was "labouring under such a defect of reason from disease of the mind as not to know the nature and quality of the act he was doing, or if he did know it, that he did not know he was doing what was wrong." Whatever modifications of what is known as the rule in McNaughton's case may have been at times suggested by the summing up of judges, or brought about by the verdicts of juries, they have been slight, and the law stands as stated above. If it were to be applied to the case of Harold Jones, it would be difficult to contend that a man or boy did not know the nature and quality of his act who killed his victim as he did, or that he did not know that it was wrong when he concealed the body and washed away the bloodstains with careful cunning. It seems, therefore, that a verdict of guilty of murder followed by sentence of death would have been inevitable if, owing to the later incidence of an assize, he had passed his sixteenth birthday when brought to trial. It is almost inconceivable, however, that a lad of such an age, even with such a record, would have been hanged. His candid and callous confession of two murders would have told both ways. It would have been taken into account as evidence of defective mentality. The usual form of petitions in his favour would have been gone through, invoking the mercy of the Crown. The Home Secretary would have advised a reprieve, and after his sentence had been formally commuted for one of penal servitude, and after further consideration by the medical advisers of the Home Office, Harold Jones in all probability would have found himself in approximately the same situation that he now occupies. It would, however, have been a lengthy and clumsy process; but failure of the defence of insanity in the assize court would have called attention once again to the rule in McNaughton's case and to the law under which judges direct juries. If Jones had been convicted, reprieved, and eventually dealt with as a person suffering from a defect of reason, it would have added weight to the arguments of those, many of whom are distinguished members of the medical profession, who assert that the rule in McNaughton's case does not meet modern requirements. These are of the opinion that there are some persons who know the nature and quality of a criminal act and know that it is wrong, but to treat whom as responsible criminals, punishable as such, is neither reasonable nor humane.

An Inquest without Post-mortem Examination.

At Chester County Court recently his Honour Judge Parsons was called on to decide whether a blacksmith had died as the result of an accident and in the course of his employment, so as to entitle his widow to an award under the Workmen's Compensation Act. The man had fallen dead on July 1st of this year after putting a tyre on a wheel; he had never complained of ill-health and was stated never to have received medical attention during his life. A medical man, who was called as a witness in the county court, was summoned after death had taken place, and as the result of what he then saw was of the opinion that the cause of death was syncope accelerated by the strain of laborious work and the extreme heat. There had been no post-mortem examination. The case for the employers in these circumstances was naturally that there was no evidence of any unusual strain or of anything amounting to an accident to account for the death of a blacksmith doing his usual work. Dr. William Lees, called on their behalf, gave an opinion, from what had been reported to him, that the deceased was suffering from high blood pressure due to thickened arteries and a dilated heart, but he pointed out with emphasis that as there had been no post-mortem examination it was not possible for anyone to state the cause of death with certainty. He could say what was the likely cause of death, but "most coroners' inquests were valueless because post mortems were refused to the doctor, especially in Chester." His Honour made an award in favour of the employers, having no evidence to support any other finding, and expressed himself as inclined to the opinion that a serious injustice might thereby be done, because no post-mortem examination had been held. He hoped that those directly or indirectly responsible for the conduct of coroners' inquests in that district would bear in mind the grave importance of post-mortem examination where the cause of death was not obvious from surface indications, and where serious interests might be involved. The public, and particularly the citizens of Chester, should be grateful to Dr. Lees for calling attention to this serious matter and to the county court judge for adding the weight of his authority to the representation made to him. The coroner's duty is to inquire and certify regarding a sudden death of which the cause is unknown; and there are few such cases, if any, in which a right conclusion can be arrived at with certainty without post-mortem examination. Certainty is important in all cases for the sake of accurate statistics in the interest of the public health, but doubly so where an issue may arise as to the right of survivors to compensation. A majority of the jury may require a coroner to order a post-mortem examination, but probably few jurors are aware of their power in this respect, or sufficiently alive to its importance to exercise it spontaneously.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Inspection of Schools.

IN both medical and political circles here there is a growing movement in favour of the reorganisation of the system of medical inspection of schools. At present school medical officers are recruited by competitive examinations amongst practitioners who in due time express their wish to be admitted as candidates to the competition: "Concours pour le Recrutement de Médecins-inspecteurs des Écoles," which is held in various counties when there are vacancies. Under the present system candidates must be over 32 years of age, of French nationality, and must have been registered under the French Medical Act for at least five years. In the first part of the competition candidates are given two hours to write two papers, one in answer to a question on a children's disease, the other to one on hygiene in schools. A certain number of the candidates, in this instance 175, are selected and admitted to the second part of the examination which consists in the medical inspection of a school and in the oral answer to a question on school hygiene. School medical inspectors carry out their duties for a period of three years. These duties consist in giving at least one consultation a week in each school; the medical inspector has to meet the parents of any new scholar in order to fill in a card on which any morbid condition should be noted, and should also see the parents of any child who has been away from school for more than three days. No treatment is given at the schools, and private practice is permitted to school medical inspectors.

Various suggestions have been made concerning the reorganisation of this system, and it is probable that the Bill dealing with the revision of the French Medical Act, February, 1902, will incorporate some of the modifications which have been suggested. One criticism that has been made is that the number of school children to be under the superintendence of any one inspector has not been officially determined. Dr. Gilbert Laurent makes a suggestion, which carries the approval of the Commission of Hygiene of the Chamber, that this number should be limited to from 500 to 1000, each group forming a "circonscription." He also asked that the school medical inspector of every group should be selected from practitioners in the corresponding district by an election committee

of the Conseil Départemental d'Hygiène. He suggests that medical school inspectors should be appointed for a period of six years and should still be allowed to devote most of their time to private practice. As so far no definite scale of remuneration has been established, he proposes to standardise the annual salary at Fr.1500 which, under the present system, corresponds approximately to the average sum offered. Another proposal made at a recent congress—the "Congrès d'Hygiène Scolaire de Langue Française"—was that the post should be held by medical officers of health at a salary of Fr.15,000, who would act as school medical officers under the supervision of the Ministry of Health and would be debarred from private practice. According to this last scheme a school medical officer would be in charge of approximately eight of the circumscriptions of Dr. Gilbert Laurent's scheme. Amongst other reforms suggested is the establishment of more open-air classes: at present there are only three in Paris. It has also been urged that the school medical officer should be compelled to get in touch with the parents when a child shows signs of any morbid condition, such as anæmia, enlarged glands or tonsils, adenoids, ringworm, dental caries, &c., and give advice as to which hospital or dispensary the children should be taken for treatment; so far this is the custom only of certain individual school medical inspectors. On the whole, it would seem that there are also strong reasons in favour of revising the present system of medical inspection of schools in France.

Antivenereal Prophylaxis.

There seems to be at the moment a revival of interest in the antivenereal prophylactic measures by means of a calomel ointment first formulated over here by Dr. Roux, director of the Pasteur Institute of Paris, and also strongly recommended by Metchnikoff, when the latter was subdirector of the same Institute. Dr. A Gauducheau has recently reported to the Société de Médecine Publique the results obtained after adding cyanide of mercury and thymol to the formula of MM. Roux and Metchnikoff. He mentioned that 68 men of the crew of a French cruiser were supplied with tubes of the ointment as prescribed by Dr. Gauducheau and were told to apply it to the external genital organs, including the fossa navicularis, before sexual intercourse. In the course of a six months' voyage, during which the cruiser put in at several ports where venereal diseases are most prevalent, none of these 68 men contracted syphilis or gonorrhœa. Dr. Gauducheau pointed out that of 181 men who only applied the ointment after sexual intercourses, five were contaminated; he also recalled previously reported statistics of 624 cases in which the ointment was applied before intercourse without a single failure of its effect. Convinced as he was of the value of such prophylaxis, he could only deplore the campaign waged against such measures by those who from a moral point of view objected to the procedure, preferring to use venereal diseases as a scarecrow. These views were warmly seconded by the President of the Society, Dr. E. Marchoux, of the Pasteur Institute, and by Dr. P. Boudin. Dr. Gauducheau, in collaboration with Mr. P. Levaditi, of the Pasteur Institute of Paris, has also carried out a series of experiments, in which the value of calomel, cyanide of mercury, and thymol ointment was satisfactorily controlled by a series of tests in vitro, and by successful applications at the site of inoculation in the case of rabbits an hour after the insertion of the syphilitic virus. These experiments, as well as Dr. Gauducheau's formula and the method of preparation of the corresponding ointment, have recently been described in a review[1] published under the scientific direction of Mr. A. Calmette, subdirector of the Pasteur Institute, and of Mr. Léon Bernard, professor of hygiene at the Faculté de Médecine de Paris.

Nov. 4th.

[1] Revue d'Hygiène et de Police Sanitaire, October, 1921, tome xliii., No. 10.

Correspondence.

"Audi alteram partem."

THE EDUCATIONAL TREATMENT OF RESIDUAL HEARING IN DEAF CHILDREN.

To the Editor of THE LANCET.

SIR,—Teachers of the deaf are naturally interested in every effort made to improve the condition of the children they teach. Generally speaking, all that medical skill can do to prevent or improve deafness has been tried and exhausted before the children come under the teachers' care, so that deafness, whatever its degree, is almost always a settled condition in the children of our schools. Deafness, however, in children is rarely absolute. The large majority are capable of audible impression to some extent or other, and it is almost certain that between 30 and 40 per cent. of the pupils now in our schools have some power of hearing the voice, more or less loudly produced. The schools accept the duty of enlisting into the service of the individual child whatever advantage, however small, he may possess in the way of natural faculty, but there is a minimum below which for practical purposes it becomes valueless in his training. That minimum is reached at the point of appreciating the more audibly apparent vowel sounds. There are two main hopes that arise from the exercise of even this small degree of vowel hearing. The first is the improvement of the voice and speech of the child, and the other, the possibility, which is extremely remote, of the increase of the hearing power itself. Every teacher is aware of the favourable effects of even vowel hearing on the speech of deaf children, and every teacher would welcome any discovery that would lead to the improvement of the actual power of hearing in his pupils.

Dr. James Kerr Love, the well-known aurist of Glasgow, recently wrote in a note to the parents of deaf children:—

> "If your child has been born deaf, or if illness has caused deafness and loss of speech, his hearing will never return. The exceptions to this statement are so few that they are not worth considering in thinking of the future of your child."

My own experience of 34 years in schools for the deaf entirely confirms Dr. Love's statement. I have never known a single deaf child in schools to recover hearing power. It is very easy for either the teacher or the doctor to be completely misled into attributing to improved hearing power that which actually belongs to lip or speech reading. Excluding this, there is a further possibility of erroneous assumption in the matter from mistaking psychic phenomena for improvement in hearing. Each one of these vowel-hearing children hears an indefinite blur of sound which conveys no meaning to him, although it may be sufficient to enable him mechanically to produce some or other of the stronger vowel elements, and, as I have already said, with marked effect on the quality of voice and speech. Constant repetition of these realised sounds gives them a definite character, and they are more readily appreciated by the ear. Those sounds are united in simple words such as "father" (AR—ER), "good boy" (OO—OY), and even into simple sentences, as "What's your name?" (O—AW—AY), "How old are you?" (OW—O—AR—OO). The child hears only the vowel sounds and becomes used to their particular sequence and distance in specially practised forms, as above, associates the full form generally acquired by lip-reading or writing, and therefore gives the idea of increased hearing power, whereas, actually there is no real improvement at all in this direction, but only an improved recognition and association in

known words and sentences of those elements of speech he has already indefinitely heard. These sounds, therefore, become mnemonics, calling up words and sentences acquired by means other than hearing for the unvoiced or semi-voiced sounds are not heard. No other conclusion is possible for the consonantal elements of speech generally make insufficient audible appeal to be recognised by actual hearing in these extremely hard of hearing cases. Moreover, if this were not so, apart from any psychic question whatever, there should be no difficulty in inducing children of this description to mechanically reproduce any word they "hear." I have tested cases of this sort by substituting such words as "rather" and "lather" for the known word, "father," and found them reproduced as the latter—a clear evidence that it was not actual hearing power, but rather the association and sequence of the heard vowels, a mnemonic phonetic memory, that accounted for the wrong reproduction. Unless, therefore, "results" in these cases are carefully analysed and traced to their source, even the very elect, whether teachers or doctors, may easily be deceived. And this frequently happens.

Over 30 years since I had charge of a class formed entirely of children with varying degrees of hearing, and 18 months' experience of this class, using the voice unaided or assisted as necessary by the double speaking tube, led me to the conviction that actual hearing power was in no way improved, but rather that the appreciation of what had been already heard was made greater—a qualitative rather than a quantitative improvement. Experience with cases of this nature continuously during the past 30 years entirely confirms my earlier judgment. Teachers do not exclude any scientific possibility, but they do say that these frequent promises for the physical relief of deafness, promises which they have never seen to materialise in any real amelioration of the condition of the deafness of children in our schools, unsettle the minds of parents of deaf children, and prevent them, in many cases, from giving such children the only hope they have—namely, suitable training and education. There is evidence, too, that medical men, including aurists, do not properly appreciate the extreme remoteness of restoring a serviceable degree of hearing power such as would make the child independent of visual means of understanding, and that the best place for such children is one which would not only conserve existing hearing power, but further carry on their oral and general education. In many cases parents and medical men do not understand the present condition of schools for the deaf. There is no doubt that many associate such schools with an atmosphere of perpetual silence, whereas in actual truth the modern school for the deaf is vocally noisier than the school for hearing children often is.

The attitude of teachers of the deaf towards this question is perfectly clear. They would welcome with open arms anything that would give to their pupils even a serviceable modicum of hearing ability, but so far as present knowledge is concerned they know that for the training of residual hearing power in deaf children, whether for increased appreciation or "sorting out" of already hazily heard speech or for the very remote possibility of developing existing hearing power, their methods, based as they are upon a scientific study of phonetics and the practical knowledge of the physical and psychic conditions of the deaf child, promise more effectually than anything yet known the fullest amelioration of the lot of the deaf. Teachers of the deaf have for many years advocated the scientific classification of deaf children according to the history and degree of deafness and their mental condition. If this were done it would be to the great advantage of the different types, but in present circumstances, and even when classification is achieved, teachers of the deaf claim that their special knowledge and experience mark them as more qualified than any other class of teacher or trainer for those children who suffer from deafness, whether complete or partial.

I am, Sir, yours faithfully,

A. J. STORY,
Chairman of the National College of
Stoke-on-Trent, Nov. 4th. Teachers of the Deaf.

To the Editor of THE LANCET.

SIR,—In Dr. Arthur F. Hurst's letter in your issue of Oct. 22nd he appears to claim that in any case of deaf-mutism, in which the vestibular reactions are normal, the deafness is functional. It would be interesting to know if Dr. Hurst is aware of the numerous cases now on record in which microscopic examinations of the labyrinths of deaf-mutes have shown a perfectly normal vestibular apparatus (including the cristæ of the semicircular canals, the macula of the utricle, with their associated nerves and ganglia), but a more or less completely degenerated cochlear apparatus. In the majority of cases the saccule was also affected. Functional examination of these patients showed a normal vestibular response. Some of them were completely deaf, while others showed remains of hearing, and it is these hearing remnants which Prof. Urbantschitsch was anxious to utilise by means of his harmonica and acoustic exercises.

For many years otologists have been in the habit of advising the parents of deaf-mutes with slight remains of hearing to speak to their children in a loud voice and to give the children noisy toys to play with. Dr. Hurst's patient efforts to educate these extremely deaf children are to be commended, but his assumption that the deafness is functional can hardly be accepted. Had the deafness been entirely of this nature, one would have expected sudden and complete restoration of hearing. Further, it is extremely difficult, if not impossible, to believe in a functional disorder of hearing arising in infancy.

I am, Sir, yours faithfully,

J. S. FRASER, M.B., F.R.C.S. Edin.
Edinburgh, Nov. 1st, 1921.

TRYPANOCIDE.

To the Editor of THE LANCET.

SIR,—With reference to the annotation on the Treatment of Sleeping Sickness, which appeared under this heading in your issue of Nov. 5th, I should like to correct a misapprehension in the last paragraph under which apparently Prof. Warrington Yorke laboured when he published his recent critical review in a medium which precluded the possibility of a reply.

The expressed object of the mission as endorsed by the Colonial Office is to test out and compare various methods of treatment already in vogue, or which may be put forward in the near future (the new German preparation "Bayer 205" having been specified) and further to place the Commission under the general direction of an independent scientist. As clinical and laboratory experience is a necessity, the Association has approached Prof. J. W. H. Eyre, of Guy's Hospital, who was in 1906 chairman of the working party of the Malta Fever Committee and he has signified his willingness to accept the post of director.

With reference to Prof. Yorke's criticism as to absence of controls I would point out that the work done by Marshall and Vassallo has been performed by them as Uganda medical officers in the field and in their spare time, without the great advantage of having their patients constantly in hospital and completely under their control, so that they have been unable to carry out all the controls and examinations which would have been possible in a well-equipped laboratory attached to a hospital in England. Further, they have carried out a method of treatment which they have found highly successful in practice and have offered several theories to explain these results. Taking their actual results as compared with other methods of treatment (the Tropical Disease Prevention

Association expects to receive early in 1922 a report embodying all the results of treatment up to that date), though some data are necessarily incomplete, there appears every prospect of these figures entirely justifying the claim that this serum method is giving better results than any other in use up to the present, especially when cases of trypanosomiasis *from the same countries* are compared.

The opinion, based on a clinical observation that "although the administration of one dose of salvarsan, neosalvarsan, or atoxyl is sufficient to sterilise the blood stream, symptoms reappear within a variable period averaging about four months and the disease progresses to a fatal termination" comes in for adverse criticism, although in the main it corresponds with the results revealed by an analysis of the figures put forward by Prof. Yorke and certainly agrees with the results of animal experiments detailed by Colonel Wenyon in his article in the *British Medical Journal* of Nov. 5th, wherein he states, "in experimentally inoculated small animals, such as mice, it is usually possible, by means of a single dose of a drug, to bring about the disappearance of trypanosomes from the peripheral blood, but almost invariably relapses occur in a comparatively short time and the animals die of the infection."

Finally, the Tropical Disease Prevention Association is not prejudiced in favour of any one method of treatment, but it does consider that fair play should be given to any method which has shown promise of success. This attitude is not conspicuous in Prof. Yorke's review. On the other hand, far from condemning the value of "Bayer 205," in spite of the fact that to the best of its knowledge this secret remedy has been used on only one human patient, the Association is, the more readily after Colonel Wenyon's experiments, prepared to investigate its importance. A German expedition under the auspices of our Colonial Office is now on its way to Rhodesia to test this treatment with the aid of our medical officers in the colony. The expedition, which I am assured by the Colonial Office is disinterested, is financed entirely by German commercial firms who, in view of the present value of the mark and the non-existence of German colonial interests, may or may not be disinterested also. Further, I am informed that the composition of "Bayer 205" will be revealed later. Past experience of German descriptions of the method of manufacture of "606" leads one to anticipate that this revelation may not enable others to reproduce the remedy in question.

It is, perhaps, not fully recognised by tropical experts working at home that treatment of such a disease as sleeping sickness must be administratively and economically practicable on a large scale as well as scientifically effective in a hospital at home. It cannot be stated too emphatically that the object of the Association is to try serum *and* other methods in the field in order to gauge their respective values for stamping out sleeping sickness.

I am, Sir, yours faithfully,

E. T. JENSEN,
Hon. Secretary, Tropical Disease Prevention Association.

Harley-street, W., Nov. 7th, 1921.

BELLADONNA POISONING:
AN OVERDOSE OF ATROPINE.

To the Editor of THE LANCET.

SIR,—In connexion with several cases of belladonna poisoning reported lately the following note may be of interest.

A boy of 19, of not a very high intellectual standard, on being discharged from hospital was given a prescription containing some citrate of potash. This prescription he ignored, and did not even take to the dispensary, but he abstracted from my consulting room a small 2 oz. glass stoppered bottle containing about an ounce of the "B.P." solution of atropine sulphate. This he took home with him, and about 2.30 P.M. took, on an empty stomach, a teaspoonful of the solution. Fortunately he did not take a tablespoonful, as he had been ordered to take of the citrate of potash mixture. About 4 P.M. he felt "queer" and his panel doctor was sent for, who gave him an emetic, and about 8.30 P.M. he was sent to the hospital, where I saw him on admission. He was restless and delirious, trying to get off the stretcher, though he could not stand. His pupils were widely dilated, and his mouth and throat very dry, but at no time was there noticed any scarlatiniform rash. A note from his doctor explained the circumstances of the case. No further emetic was given, but morphia (gr. $\frac{1}{4}$) and nitrate of pilocarpine (gr. $\frac{1}{4}$) were injected, the urine drawn off to prevent any reabsorption, and 2 or 3 pints of strong hot coffee administered. At 11 he was no worse—a smaller dose of morphia and pilocarpine was administered—the urine again drawn off and more hot coffee given. At midnight he recognised the night sister and myself, and at 8 A.M. the next morning he was practically all right—the pupils were, however, still dilated. At noon he ate the usual hospital dinner, and the next day he was discharged.

I obtained the actual teaspoon used to measure the dose: "brimming full" it contains 90 minims, ordinarily "full" about 60 to 70 minims, so that with 1 gr. in 110 minims he must have taken at least $\frac{1}{2}$ gr., and possibly more, of sulphate of atropia on an empty stomach.

I am, Sir, yours faithfully,

H. NEVILLE TAYLOR, M.A. Camb., M.D. Dub., F.R.C.S. Edin.,
Surgeon, Ebbw Vale Hospital; Consulting Medical Officer, Ebbw Vale Medical Society.

Ebbw Vale, Nov. 1st, 1921.

OCCIPITO-POSTERIOR PRESENTATIONS.

To the Editor of THE LANCET.

SIR,—May I call attention to a feature of modern obstetrics? It appears to me that persistent occipito-posterior presentations are not only commoner than text-books would lead us to believe, but tend yearly to become more frequent. In a recent British Medical Association lecture,[1] Prof. W. Blair Bell said that, "Owing to the fact that this presentation, if left alone, almost invariably rotates into the occipito-anterior position, the frequency of the occipito-posterior position as a primary presentation has probably been much underestimated." My experience does not teach me that "almost invariably" patience will resolve the awkward presentation into something simpler. Rather am I impressed by the multiplicity of cases in which labour proceeds until the persistence of this presentation leads to exhaustion of the maternal resources and constitutes a menace to mother and infant. Conversation with fellow practitioners and maternity nurses strengthens my conviction that such cases are on the increase. From rough notes of cases within my own limited experience, I find that in the year 1909 (out of 116 full-time labours attended) 8 were persistent occipito-posterior presentations; in 1918 (of 163) 22; in 1919 (of 115) 24; and in 1920 (of 126) 31. Reduced to percentages, these figures work out as 6·8 in 1909, and 13·1, 20·8, and 24·6 respectively for the last three years.

For various reasons I do not pause to discuss what evolutionary processes contribute to bring about this development. But I see that, if its reality be conceded, it is time that those who instruct potential obstetricians were agreed upon the method best calculated to meet this contingency in labour. Because, in a majority of cases, delay or faulty manipulation means damage to maternal structures—and the tale of injury may not end there. Quarter of a century ago, as a student, I heard of the method which I still deem best—application of forceps, rotation of the fœtal head, and traction—but my professor never himself practised the trick, and, indeed, towards the end of his life showed pride in that fact. Such an attitude, or at best a little bending, is still widely prevalent. Yet the manœuvre is simplicity itself. Chloroform anæsthesia is desirable but not imperative for its performance. Essential to success are (*a*) correct diagnosis of the "lie" of the head and accurate adjustment of the forceps; (*b*) secure maintenance of the "lock" until deliverance of the head, or its deposition within manual control

[1] Delivered before the Bradford Division, May, 1921.

upon the perineum, has been effected; (*c*) a gentle thrusting of head in instrument towards the uterine cavity to secure a sense of freedom before rotation is attempted; (*d*) the simple mechanical revolution of instrument with head as one turns a key to open a door; and (*e*) traction in the routine way, without any other preparation, once the occipito-anterior position has been attained.

Most authorities who commend the method consider that, when rotation has been managed, the forceps should be withdrawn and reapplied in the orthodox position (in conformity with the vaginal curve) but in practice neither embarrassment nor difficulty attends delivery without this precautionary manœuvre. Contrary to expectation, the instrument does not slip or prove awkward. And, always, the minimum of manipulation consistent with efficiency should be our ideal.

An objection raised by Dr. Robert Jardine before the Glasgow Obstetrical Society in March last, that "rotation of the head by forceps . . . . twisted the head on the neck while the shoulders are not turned," is theoretical only. The method offers no practical difficulties; but constitutes, in my experience, the readiest, safest, speediest solution of what is nowadays a common problem in obstetrics.

I am, Sir, yours faithfully,

Belfast, Oct. 31st, 1921. ROBERT WATSON.

BRITISH SPA FEDERATION.

To the Editor of THE LANCET.

SIR,—At the biennial meeting of this Federation, held recently, it was decided that for the future the British spas in the Federation—i.e., Bath, Buxton, Cheltenham, Droitwich, Harrogate, Leamington, Llandrindod Wells, and Woodhall—will require their patients to have medical prescriptions of not more than 12 months old for all treatments except a few generally recognised to be obtainable at any "hydro" or treatment establishment.

I am, Sir, yours faithfully,

F. J. C. BROOME,
Nov. 2nd, 1921. Hon. Secretary.

*** The dangers of self-drugging are largely removed by any regulations which prevent the use of old prescriptions; these are often used by others than those for whom they were intended originally.—ED. L.

PEOPLE'S LEAGUE OF HEALTH.—Under the patronage of Her Majesty the Queen, a ball will take place at Devonshire House (lent by the owners, Messrs. Holland and Hannen and Cubitts) on Friday, Nov. 25th, in aid of the League. At the first issue ball tickets are priced at £2 2s.; they may be obtained, and boxes booked, at the box offices, from the members of the Ball and Fête Committee, and from G. Sherwood Foster, 7, Hanover-square, W. 1.

MEMORIAL TO LIEUT.-COL. E. F. HARRISON.—On Nov. 2nd, the Secretary of State for War unveiled the memorial erected in the Examination Hall of the Pharmaceutical Society, 17, Bloomsbury-square, in honour of the late Lieut.-Colonel E. F. Harrison, Controller of Chemical Warfare, and one of the most distinguished graduates of the Society's school. Colonel Harrison, it may be recalled, joined the army as a private in 1915, when he was 47 years of age. He was transferred as a corporal to the Special Anti-Gas Branch of the Royal Engineers after the first German gas offensive, and at once became identified as the leading spirit in the department organised to fight the menace of poison-gas warfare. He was closely associated with the evolution of the small box respirator, the most perfect of all anti-gas appliances, 20 million of which were manufactured before the end of the war. As a scientific pharmacist, Harrison had made a great reputation for himself before the war, and on his death, in November, 1918, from pneumonia probably aggravated by the effects of the gases to which he was exposed during his researches, his confrères organised a fund to perpetuate his memory. The memorial consists of an alabaster tablet, inlaid with mosaic, in which is set a circular bronze relief portrait. A biographical notice of Colonel Harrison by Prof. E. H. Starling appeared in THE LANCET, 1918, ii., 681.

Obituary.

JOHN WICKHAM LEGG, F.R.C.P. LOND., M.D. LOND., F.S.A.

Dr. J. Wickham Legg died at his home in Oxford on Oct. 28th at the age of 78. Although his chief work lay outside medicine he was at one time a notable figure in London medical circles. He qualified M.R.C.S. Eng. in 1866, becoming M.D. Lond. in 1868, M.R.C.P. Lond. in 1869, and F.R.C.P. Lond. in 1876. Soon after qualification Dr. Legg was chosen by Queen Victoria to act as tutor and medical attendant to her delicate son, Prince Leopold, Duke of Albany, and he continued to act in the latter capacity throughout the life of the prince. Dr. Legg became assistant physician to St. Bartholomew's Hospital in 1878; he remained on the staff for only nine years, retiring owing to ill-health in 1887. He was specially interested in the cardio-vascular system, published a treatise on Hæmophilia, and gave the Bradshaw lecture in 1883 on Cardiac Aneurysms. For the last 30 years of his life Dr. Legg devoted himself to archæological research in general and especially to the study of ancient documents relating to the churches, and was generally accepted as a liturgical expert. Dr. Legg's wife predeceased him; his only son is fellow and tutor of New College, Oxford.

Dr. Arthur Maude writes:—

I knew Wickham Legg well, and was his clinical assistant in the skin department at St. Bartholomew's. It was a pleasure which I can well recall to dine with him at his charming little house in Green-street. He was an excellent host, appreciated his own good fare, and was an interesting and stimulating talker and raconteur. Dr. Legg was appointed casualty physician in January, 1870, on the first institution of that office. He succeeded Dr. Norman Moore as demonstrator of morbid anatomy and was made lecturer on pathology in 1879. Legg was a very handsome man, always well dressed; he had undemocratic prejudices, and occasionally caused amusement among the students by airing them, but those who knew Legg knew their signification. He was a poor lecturer and seemed incapable of arranging a consecutive discourse, but he was a good clinical teacher and could illuminate his ideas with valuable medical anecdotes culled from history and from bygone medical writers. He was, moreover, a careful observer and a humble student when dealing with a subject new to him. Legg succeeded Mr. Morant Baker as dermatologist at Bart.'s, a difficult position since Baker was one of the best skin specialists in London at that time and Legg knew little about the subject when he got his appointment—a very usual position in all medical schools at that date. But he soon learned his subject. I was his first clinical assistant and we worked most agreeably together for six months in 1882, in a large and interesting clinique. In 1880 I saw a great deal of him in Dr. Gee's wards where I was then clerking, when he became the assistant physician corresponding to Dr. Gee. I owe much to his careful and learned instruction, especially in diseases of the liver and pancreas, a branch of pathology in which he took an interest secondary only to his interest in cardiology. He was even then a fine historian and had seen a good deal of British diplomacy abroad, being especially intimate with Sir Augustus Paget, when he was Minister at the Quirinal. I remember that in his library at Green-street he would take down book after book of eighteenth century memoirs to illustrate his wide knowledge of the intrigues of the bygone century.

Though Wickham Legg leaves his mark as historian and archæologist, he was for many years a learned and wise physician.

ANDREW ALEXANDER BROCKATT, M.D. BRUX., M.R.C.S.

Dr. Brockatt, of Great Malvern, who died in London on Oct. 24th, was in his fifty-eighth year. He entered St. Thomas's Hospital as a student in 1881, qualified in 1885, and then held house appointments there and at the Brompton Hospital for Consumption. Before settling down to practice he made several voyages as ship's doctor to India and China, and acted for a time as medical registrar at his own hospital. In 1889 he joined the late Dr. Thelwall Pike in practice

at Great Malvern, in the same year taking the degree of M.D. Brux. with honours. For 30 years Dr. Brockatt practised at Malvern, his strong personality, sound judgment, and exceptional medical skill causing his services to be sought after over a wide area in Worcester, Hereford, and adjoining counties. Much of his time and thought was given to the welfare of the boys at Malvern College, where he was medical officer for 18 years. His rule was to be informed of every case of illness or injury, however trivial it might seem to be, and the observance of this regulation did much to prevent the outbreak of epidemics in the school. He took much interest in Freemasonry, and was a past Master of the Malvern Lodge. He was also one of the founders of the Cheseldon Lodge attached to St. Thomas's Hospital. On retiring from practice he was presented by his old patients with a silver cup and a substantial cheque. Dr. Brockatt, who was unmarried, died after a long and painful illness borne with much fortitude.

EDGAR BEAUMONT, M.D. DURH.

Dr. Edgar Beaumont was born in 1860, and was the son of Josiah Beaumont, of Huddersfield. Entering the medical school of St. George's Hospital in 1881, and having previously begun his medical study in Yorkshire, he qualified M.R.C.S. in 1883 and L.R.C.P. and L.S.A. in the following year. In 1907 he took the M.D. at Durham. After a hard struggle in his early years he built up a good general practice in the neighbourhood of the Crystal Palace. His ability and happy disposition brought him success, for he had in a high degree the gift of becoming the friend as well as the medical guide of his patients. He touched life at many points; as surgeon to the Norwood Cottage Hospital he kept well abreast of modern developments and never spared himself. He was a keen horseman and sportsman and enjoyed his holidays like a boy. Some 20 years ago he collaborated, under the pseudonym of Clifford Halifax, with the late Mrs. L. T. Meade in a series of detective stories which appeared in the *Strand Magazine* and had a medical flavour, the investigator having a busy practice in Harley-street. The plots were mainly supplied by Beaumont, who, though urged to continue the series, never found time to do so.

A large number of St. George's men, as well as many patients and friends, will learn of Beaumont's death with sincere sorrow. He was highly popular for the excellent reasons that he was a good, generous, and charitable man, as well as a very competent practitioner. His health had long been unsatisfactory, and he had had several short attacks of acute illness since 1914. He was, however, spared the trials of a prolonged invalidism and incapacity for the life and work he loved, for he died in Charing Cross Hospital 12 hours after the onset of cerebral hæmorrhage. He leaves a widow and a married daughter.

DAVID DRYBROUGH GOLD, M.D.EDIN.,
M.O.H. FOR HEREFORDSHIRE.

Dr. D. D. Gold died very suddenly at his residence, Rydal Mount, Hereford, on Friday, Nov. 4th, on returning from a performance at the Kemble theatre. He was found lying dead on the floor of his bedroom, and at the inquest, held on Saturday night, evidence was given that Dr. Gold had recently remarked to a medical friend that he suffered from pains in the chest, but he had not received medical treatment. To his wife and friends he appeared in his usual health, and had spent a very active week. A verdict of death from heart disease was recorded by the coroner, who sat without a jury.

Dr. Gold, who graduated M.B., C.M.Edin. in 1896 and obtained his M.D. in 1904, was formerly assistant M.O.H. for the county of Essex. A Scotsman by birth, he was nearly 50 years of age; in 1918 he married Mrs. Margaret Ward, youngest daughter of the late Mr. James Duffas, of Cupar, Fife. He had held the office of County M.O.H. for Herefordshire ever since January, 1909, and he was deservedly popular with all who came in contact with him. He took a prominent part in the work of the County Insurance Committee and, during the war, in Red Cross work. The news of his death was heard with great regret in the city and county of Hereford.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surgn. Comdr. E. T. P. Eames is placed on the retd. list at his own request, with rank of Surgn. Capt.

ARMY MEDICAL SERVICE.

Maj. and Bt. Lt.-Col. R. B. Ainsworth, R.A.M.C., to be Dep. Asst. Dir.-Gen., and to relinquish the temp. rank of Lt.-Col.

ROYAL ARMY MEDICAL CORPS.

Lt.-Col. and Bt.-Col. E. E. Powell is placed on ret. pay, and is granted the rank of Col.

Maj. and Bt. Lt.-Col. G. F. Sheehan is placed on the h.p. list on account of ill-health.

Maj. J. M. Cuthbert retires on ret. pay.

Lt. (temp. Capt.) M. C. Paterson to be Capt.

Temp. Lt. J. W. H. Steil to be temp. Capt.

J. D. Leahy to be temp. Lt.

The undermentioned temp Capts. relinquish their commns. and retain the rank of Capt.: G. D. K. Waldron, D. Finlayson, and A. A. Watson.

ARMY DENTAL CORPS.

Temp. Capt. C. V. Walker, Dental Surg., from Spec. List, to be Lt., and to be temp. Capt.

Lt. (temp. Capt.) L. S. Woodiwis to be Capt.

ARMY RESERVE OF OFFICERS.

Capt. H. W. Vaughan-Williams, having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

TERRITORIAL ARMY.

The undermentioned officers, having attained the age limit, are retired and retain their rank, with permission to wear the prescribed uniform: Lt.-Cols. J. H. G. Whiteford, A. C. Miller, D. Durran, and A. Butler. Majs. G. S. Ward, J. N. Macmullan, and W. Dyson.

Capt. (now Maj.) H. W. Read is restored to the estbt.

Maj. F. Philip resigns his commn. and retains the rank of Maj., with permission to wear the prescribed uniform.

Capts. B. T. J. Glover, J. M. Johnstone, and J. S. Ranson resign their commns. and retain the rank of Capt.

Capt. A. S. Hooper, having attained the age limit, is retired and retains the rank of Capt.

1st S. Genl. Hosp.—Lt.-Col. (Bt.-Col.) F. Marsh, having attained the age limit, is retired and retains his rank.

4th Lond. Genl. Hosp.—Capt. H. S. Pendlebury, having attained the age limit, is retired and retains the rank of Capt.

TERRITORIAL ARMY RESERVE.

Maj. T. D. Laird, having attained the age limit, is retired and retains the rank of Maj., with permission to wear the prescribed uniform.

ROYAL AIR FORCE.

Flight-Lt. A. F. Wright relinquishes his temporary commn. on ceasing to be employed.

J. R. Crolius is granted a short service commn. as a Flight-Lt.

DEATHS IN THE SERVICES.

Major-General Sir GEORGE JOSEPH HAMILTON EVATT, K.C.B., A.M.S. (retd.), died in London on Nov. 5th, aged 77. Educated at the Royal College of Surgeons and Trinity College, Dublin, he entered the army in 1866 and ten years later served in India with Sir H. Ross. He afterwards served in the Afghan War of 1878-80, and in the second campaign commanded a field hospital and took part in the advance to Kabul under Sir Charles Gough. He also served in the Suakin Expedition. He had held the posts of medical officer at the Royal Military Academy, Woolwich, sanitary officer at the Garrison, secretary to the Royal Victoria Hospital, Netley, and surgeon-general to the Second Army Corps at Salisbury. He was co-founder with Sir James Cantlie of the R.A.M.C. Volunteers in 1883. During the war he was president of the travelling medical board in the Western Command. We hope to publish a fuller notice of Sir George Evatt's career in an early issue of THE LANCET.

INTERNATIONAL LABOUR CONFERENCE AT GENEVA.

(FROM A MEDICAL CORRESPONDENT.)

THE real significance of the appearance of medical items in the programme of the Third International Labour Conference lay not so much in the particular subjects under discussion as in the precedent which is created by the consideration of problems of industrial medicine in the public forum of what may be regarded as a form of international parliament. At the time of writing it is doubtful whether any convention will be agreed upon as regards the use of white lead in paint, and it is almost certain that no convention will be passed at this session for the disinfection of anthrax-infected wool. On the other hand, the attention of employers and governments the world over has been drawn to these two problems and from this fact alone much profit will certainly accrue. But the future of these conferences is pregnant with possibilities much greater than that of the elimination of anthrax from the wool trade. Supposing that merchant seamen should demand an investigation into the prevention of ship-borne plague, or some grinders' union obtain from the Labour Bureau the preparation of a draft convention concerning the use of the old-fashioned sandstone wheel which is responsible for preventable silicosis, measures of capital importance to the health of workers in almost every land might at once be inaugurated.

The Debate on Anthrax.

The measures taken by the British Home Office have been continually referred to in the special anthrax commission now sitting. It may be recalled that the departmental committee appointed to inquire as to the precautions to be taken for prevention of danger from anthrax in the manipulation of wool, goat hair, and camel hair, reported that "precautionary measures are insufficient and that complete protection can only be afforded by disinfection of the raw material before it enters the factories"; and that subsequently a government disinfecting station was established at Liverpool. The draft convention of the Labour Office, drawn up after consideration of the replies of various governments to a questionnaire, contains provisions for the establishment of an international anthrax commission which would prepare a schedule of suspected wools—"wool" for the purposes of the convention being defined as "sheep's wool, camel hair, and goat hair." Article 7 contains the gist of the proposed convention and runs as follows:—

> Each member which ratifies this convention engages to prohibit the importation of wools included in the "Schedule of Suspected Wools" unless it is satisfied that such wool has been efficiently disinfected at the exporting port, or unless it has made arrangements to secure its efficient disinfection at the importing port.

The administrative difficulties of such a measure are recognised. The Indian representatives made it clear that it is impossible to control the importation of infected wool over 1600 miles of frontier, while to disinfect at the export stations would be an extremely difficult and costly undertaking. Great Britain, it would seem from the discussion, is the only country which uses infected wool to any considerable extent, though as a British delegate remarked, if Great Britain takes effective measures to keep infected wool out of the country the problem will soon affect other nations. The effect of disinfection on the wool itself was a subject of much controversy. While Colonel Foster claims from experience that the disinfected wool is improved in quality, others were disposed to believe that it is sold at a higher price merely because the cost of disinfection has to be added. It seemed to be generally agreed that disinfected wool cannot be "sorted"; at the same time, it was stated that small risk from "wool-sorters' disease" attends the sorting of better quality wools. More than one delegate pointed out the desirability of attempting to stamp out anthrax at its source, though again the practical difficulties of doing this, especially in the more dangerous eastern countries, appear to be almost insuperable. At the time of writing it seems probable that a permanent commission, representing at least Great Britain, France, and Germany as manufacturing countries, Australia, India, and South Africa as producers, and possibly also Italy and the United States of America with an office in London, will be constituted to inquire into all these problems with instructions to report to the next Conference in 1923.

White Lead in Paint.

On the agenda paper discussion is to be taken in the following order—viz., medical, economic, technical, operative painters. As to the necessity and technical possibility of replacing white lead by zinc oxide in paint, agreement is unlikely at the present Conference. The diagnosis of plumbism was discussed for several hours, almost entirely by medical experts, among them Sir KENNETH GOADBY and Dr. T. M. LEGGE (Great Britain), Dr. LEYMANN and Dr. K. P. LEHMANN (Germany), and Dr. GILBERT (Belgium). The last-named laid much emphasis on the diagnostic importance of the discovery of basophilia. He considered that if large numbers of men in a given industry were found to have basophilic granulation that would prove that industry to be extremely dangerous. Prof. LEHMANN agreed with this significance of the blood observations. Sir KENNETH GOADBY brought forward some evidence of the fallibility of the test and the difficulty of differentiating between the basophilia of lead absorption and that due to malaria. Classifying cases of lead poisoning into two groups, an "explosive" type with classical symptoms and lead absorption accompanied by elimination, he argued that the granulations might well result from the passage of lead through the system in the second type. A medical subcommittee was then appointed to report on the capability of medical science at the present time to recognise plumbism. After sitting in camera this subcommittee reported as follows:—

> Medical science has been able for a long time to diagnose satisfactorily typical and severe cases of plumbism. Modern methods of diagnosis in the hands of specially trained medical men enable them (1) to recognise plumbism in most doubtful cases; (2) to exclude cases of wrongly alleged plumbism; (3) to recognise lead absorption and lead poisoning at an earlier stage than heretofore.

There is little, if any, dissent from Sir Kenneth Goadby's attempt to prove that while lead poisoning is an occupational disease it takes a relatively unimportant place among occupational diseases in general and the diseases to which painters in particular are liable. The fate of the draft convention to prohibit the use of white lead in paint is still in doubt.

Congress of Working Women.

The discussions of this international congress, held in Geneva from Oct. 19th–25th, were largely concerned with the subjects to be dealt with subsequently at the Labour Conference. The following extracts from their resolutions may be of interest:—

> *Children on Board Ship.*—All children should be subject to a medical inspection before being accepted in industry or commerce, but no child should be employed on board ship without the most rigorous medical examination. Since they are obliged to leave their families for an indefinite time, from a humanitarian standpoint it is necessary that they should be in perfect health during this period of separation.
>
> *White Lead in Painting.*—This Congress demands the immediate prohibition of the use of white lead in painting and for manufacturing uses. To require periodical medical examinations, public reports, and as wide publicity as possible to make known the extent of the ravages caused by this industrial poison.
>
> *Anthrax.*—It is desirable that wool should be subject to efficient disinfection as near the source of origin as possible: (*a*) while in the hands of the grower, (*b*) or when accumulated by the exporter, (*c*) and certainly prior to embarkation.
>
> *Agriculture.*—Agricultural workers must not sleep in barns and stables. Each worker must be provided with a bed. Every facility for medical assistance for women and children must be provided in rural districts.

Geneva, Nov. 5th.

Public Health Services.

SCARLET FEVER AND DIPHTHERIA IN LONDON.

A REPORT presented on Nov. 5th to the Metropolitan Asylums Board by its Infectious Hospitals Committee, in considering the special measures required for dealing with the present abnormal seasonal rise of infectious disease, adds: "It is thought that the necessity for these special measures will only last for a few weeks." The report, which is dated Oct. 27th, runs as follows:—

The minimum number of patients in the Board's fever hospitals during 1921 was 5423 at midnight on Sept. 3rd. This *minimum* exceeds the *maximum* number of cases under treatment on any one day in 17 of the last 22 years. From Sept. 4th, when the present seasonal rise began, to midnight on Oct. 24th, 9504 fever cases were admitted and the number under treatment increased between those dates by 3586—viz., from 5423 to 9009. The latter number is 1539 more than on the corresponding date last year, and 340 more than the maximum number of patients under treatment on any one day last year (8669 on Nov. 23rd, 1920), when the seasonal rise was the highest in the Board's history. Since Sept. 3rd the daily admissions of fever cases have exceeded 200 on 21 occasions, the maximum having been 271 on Oct. 4th. The highest on any one day in previous years was 244 on Nov. 5th, 1920.

It may be taken that the Board have beds for about 9500 cases in all—i.e., approximately 900 more than the highest number under treatment last year. At the beginning of the week ended Oct. 22nd the acute hospitals were almost full, practically the whole of the beds then vacant being at the Southern and Orchard Hospitals, Dartford, and not available for direct admissions, but only for cases transferred, as soon as they become convalescent, from the acute hospitals, and it appeared unlikely, having regard to the altogether unprecedented rate at which applications for admission were being received, that the Board would be able to admit all the cases.

In these circumstances, in company with the deputy clerk to the Board and Dr. Caiger, medical superintendent of the South Western Hospital (acting in connexion with infectious fevers in place of the principal medical officer), our chairman saw Sir George Newman, K.C.B., chief medical officer of the Ministry of Health, on Oct. 18th, and discussed the position with him, and as a result a conference took place on Oct. 21st between the representatives of the Board appointed last year and of the medical officers of health—at which the Ministry of Health were also represented—and the following proposals were agreed to—viz.:

(i.) *Scarlet Fever.*—(*a*) On and from Tuesday, Oct. 25th, all applications for the admission of cases of scarlet fever to the Board's hospitals to be made, in the first instance, to the medical officer of health, who will select the most necessitous cases and advise the Board thereon. (*b*) Preference in admitting cases to be given to the poorer and more crowded districts, especially to cases coming from homes where there is unemployment.

(ii.) *Diphtheria.*—It is anticipated that there will be no delay in admitting all cases of diphtheria.

A supplementary statement issued by Mr. W. Eickhoff, chairman of the Infectious Hospitals Committee, brings the figures up to date, Nov. 4th:—

Number in hospital, Nov. 3rd, 1921	9446	Scarlet fever	6239
		Diphtheria	2901
Number a year ago	8041	Scarlet fever	5245
		Diphtheria	2363
Maximum last year, Nov. 23rd, 1920	8669	Scarlet fever	5664
		Diphtheria	2594

	Excess over this time last year.	Excess over maximum last year.
Scarlet fever	994	575
Diphtheria	538	307
All diseases	1405	777

From Sept. 4th to midnight on Nov. 3rd, 1921, 11,545 fever cases were admitted.

The number under treatment between midnight on Sept. 3rd and midnight on Nov. 3rd rose by 4023.

The report concludes by stating that a certain proportion of the patients now admitted show little or no clinical signs of the disease, but are merely bacteriological cases. It was agreed that the medical officers of health should impress upon the medical practitioners in their districts the great desirability of not making application for the admission to hospital of such cases.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Mental Treatment of Ex-Service Men.

SOME confusion seems to have arisen as to the allowances payable by the Ministry of Pensions to ex-Service men undergoing treatment for mental disorder. In reply to a question in the House of Commons, Mr. MACPHERSON explained that men suffering from certifiable insanity due to war service were eligible for treatment and allowances at the expense of the Ministry in any institution approved by the Board of Control, which, in the opinion of his medical advisers, afforded the most appropriate treatment. Treatment allowances in respect of these patients were made on substantially the same basis as in other cases of in-patient treatment and did not vary with the institution. The officers, whose mental condition was due to service, at present in Chartfield were receiving maximum retired pay, but after consultation with the Board of Control the Ministry had not placed this home on the approved list for the reception of such patients and had refused to accept responsibility for the charges made there for medical treatment. This decision is in accordance with the general policy of the Ministry of Pensions, which is to separate persons suffering from certifiable insanity from other patients. Mr. MACPHERSON pointed out that he was bound to send certified patients to a place approved by the Board of Control. Chartfield had now been inspected and a report of the work done at this institution would be impartially considered when it was received.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 2ND.

National Health Insurance Bill.

The House went into Committee on the National Health Insurance (Prolongation of Insurance) Bill, Mr. JAMES HOPE in the chair.

Sir A. MOND (Minister of Health), answering questions with regard to the Bill, said that the additional benefits which would be paid under the measure would be paid by the approved societies. It was difficult to state exactly what those amounts would be, but there was every reason to believe that the figure might be taken as being between £500,000 and £750,000. The approved societies had, he said, a surplus of £5,000,000. In addition, every society had got a contingency fund, and in that there was no less than £2,000,000. Those societies who had a deficiency on valuation could fall back upon this £2,000,000. Therefore he thought they need not be alarmed in regard to finance. As to what benefits the people would receive who were going, so to speak, to have the extra contributions paid for them, obviously it was not proposed to pay the entire full benefit which was to be paid to those who had not fallen into arrears. It was proposed to pay (*a*) medical benefit to June, 1923; (*b*) full maternity benefit; (*c*) full additional benefit; (*d*) sickness benefit of 8*s.* for men and 7*s.* 6*d.* for women, compared with the full benefit. If the Bill was not passed very large numbers of people would fall out, and the whole National Insurance scheme would become endangered.

The Committee stage having been concluded, the Bill was considered on report.

On the motion for the third reading,

Sir G. COLLINS asked the Minister if he did not think that the time had arrived when all the Insurance Acts should be consolidated into one Act, and when there should be an inquiry into the whole working of National Insurance. He was aware that the Minister had held out hope that he might set up a Committee or Royal Commission to inquire into the working of the Act. He hoped that before the Bill passed its Third Reading, in view of the pressing need for economy in all matters, they might have some assurance from the Minister on that point.

Sir A. MOND agreed that a Consolidation Bill to consolidate all previous legislation on this subject would undoubtedly be of considerable value. Such a Bill was practically prepared, and it was a question only of finding Parliamentary time. He hoped that they would be able to pass such a Bill next session. He had been giving considerable attention to the matter of setting up some form of inquiry into the working of the National Health Insurance. He thought those who wished for an inquiry would be well advised not to press for it immediately, but to allow a more normal state of things to come about in which they could see more clearly where they were, and then to appoint an important commission to deal not merely with one aspect of the cost of administration but with a number of other aspects of the working of the scheme now brought forward.

The Bill was read a third time and passed.

The Supply of Milk for Mothers and Children.

Sir ROBERT NEWMAN asked the Minister of Health whether in consequence of Circular No. 185, issued by the Ministry of Health on March 31st, 1921, the powers of local authorities to supply milk to mothers and children had been considerably curtailed, with the result that this winter, when great distress and suffering was likely to be experienced owing to unemployment, the local authorities would not be allowed to supply as much milk to mothers and children as last year when conditions were more favourable; and whether, in view of the importance of protecting child life, he would consider the advisability of restoring to the local authorities the discretionary powers they possessed under the Milk (Mothers and Children) Order, 1919, before those powers were curtailed by the circular issued last March.—Sir A. MOND replied: The conditions imposed by Circular 185 were designed mainly to ensure that milk should be supplied only to necessitous cases, and it is not anticipated that they will result in any appreciable reduction of the amount supplied in each case. Recent estimates indicate that the expenditure of local authorities on milk has increased under the new conditions. The Milk (Mothers and Children) Orders, 1919, extended the supply to other than necessitous cases. These orders were made under powers conferred by the Defence of the Realm Regulations, which have now lapsed, and in any case their restoration would not assist the persons whom my hon. friend has in mind.

Medical Officers of Bradford Corporation.

Mr. RATCLIFFE asked the Minister of Health if he was aware that the Bradford corporation employed 33 full-time medical officers; what their annual salaries amounted to; how did this number compare with other towns of a similar size and population; how did the amount of their salaries affect the taxpayer; and could he take any steps to reduce this number.—Sir A. MOND replied: I have not full information as to the total number of medical officers employed by the corporation of Bradford. I am concerned only with those whose salaries are a charge on grants administered by my department, and I am now in communication with the Bradford corporation as to this portion of the staff.

Summer Time and School-children.

Major KELLEY asked the President of the Board of Education whether his department had obtained the opinion of education authorities with regard to the effect of summer time on school-children; and whether their opinion was in favour of its continuance.—Mr. J. PARKER replied: The Board have not yet received replies to their circular of May 24th from all the local education authorities, but of the 272 authorities who have replied a majority (158) are in favour of the continuance of the Summer Time Act, 29 expressed no definite opinion, and while 85 attribute some ill-effects to the operation of the Act, the great majority of those authorities take the view that they would be obviated if the parents would send the children to bed at a reasonable hour.

Approved Societies and Medical Benefit.

Mr. TREVELYAN THOMSON asked the Minister of Health what reduction he proposed to make in the levy of 9*s.* per member required from approved societies on account of medical benefits, seeing that doctors' fees had now been reduced from 11*s.* to 9*s.* 6*d.* per member.—Sir A. MOND replied: The present cost of medical benefit is 13*s.* 9*d.* per head. Nine shillings and sixpence is charged to Insurance Funds, to which the Exchequer contributes the statutory two-ninths. The excess cost of 4*s.* 3*d.* per head is met by a special Exchequer grant. The saving due to a reduction in doctor's fees must clearly go in relief of the excess cost charged to the Exchequer.

Testing of Clinical Thermometers.

Mr. JESSON asked the President of the Board of Trade whether clinical thermometers of foreign manufacture would be accepted for testing at the National Physical Laboratory; and whether the Government would insist that such thermometers be marked with the country of origin, as well as the letters N.P.L., in order to prevent the assumption that they were of British manufacture, with a view to safeguarding the British industry.—Sir WILLIAM MITCHELL-THOMSON replied: The answer to the first part of the question is in the affirmative. I am advised that the standardisation mark of the National Physical Laboratory, which is registered under the Trade Marks Act, is and has always been intended to convey a certificate of the accuracy of the articles marked. The Laboratory are not in a position to determine or certify the origin of thermometers presented to them for marking. The question of the requirement of an indication of origin in the case of clinical thermometers is part of the large question of the compulsory marking of foreign goods generally which will be dealt with in the Bill to amend the Merchandise Marks Act which His Majesty's Government have undertaken to introduce.

THURSDAY, NOV. 3RD.

Bellahouston Hospital Report.

Mr. DUNCAN GRAHAM asked the Minister of Pensions whether it was his intention to circulate the report of the committee who inquired into the conditions obtaining in Bellahouston Hospital; and, if so, when it would be circulated.—Mr. MACPHERSON replied: The report will be published and placed on sale at the earliest possible date. I will arrange to supply my hon. friend with a copy if he so desires.

Institutional Treatment of Tuberculous Ex-soldiers.

Mr. TREVELYAN THOMSON asked the Minister of Pensions what steps had been taken and were being taken by his department to indemnify local insurance authorities for the expenses incurred by them for the institutional treatment of ex-Service men whose appeals for pensions on account of tuberculosis had been upheld after the Ministry had declined liability, and ceased payments for institutional treatment.—Mr. MACPHERSON replied: The expenses of residential treatment for ex-Service men suffering from tuberculosis are settled directly between my department and the Ministry of Health, in accordance with preferential arrangements applicable to ex-Service men, and subject to a mutual arrangement entered into between the two departments. I am not aware that there has been any failure to deal with the claims referred to in the question in accordance with the agreement reached.

Small-pox in Glasgow.

Mr. ROBERT YOUNG asked the Secretary for Scotland if he would ascertain from the medical officer of health for Glasgow how many of the children under 10 years of age who were attacked by small-pox in the outbreak in 1920 belonged to families living in one room, two rooms, three rooms, and four rooms and upwards, respectively; and whether any, and, if so, how many, of the fatal cases came from such families.—Mr. PRATT replied: The figures in reply to the first part of the question are respectively 13, 66, 13, and 2. Of these, 5, 18, 6, and 2 respectively were fatal cases. These figures exclude 4 cases from beyond the city boundary.

Soldiers and Venereal Disease.

Major COLFOX asked the Secretary of State for War what number of soldiers suffering from venereal disease were treated in barracks or auxiliary hospitals, and were not calculated in the official returns.—Sir L. WORTHINGTON-EVANS replied: All soldiers suffering from venereal disease are admitted to hospital and are treated in hospital till active signs of the disease have disappeared and they are fit to return to duty. All such cases are included in the official statistical returns. Cases of syphilis have subsequently to undergo a prolonged course of out-patient treatment in barracks, but they are not included in statistical returns after their discharge from hospital unlsss readmission is necessary, when they are again included in the returns.

Major COLFOX asked the Secretary of State for War what had been the incidence in rates per 1000 per annum of venereal disease amongst British troops in the United Kingdom, in the Army of the Rhine, and in the Army of the Black Sea, for 1919, 1920, and the first half of 1921.—Sir L. WORTHINGTON-EVANS replied: In the subjoined table the figures shown between brackets for 1919 are those which were given under reserve on May 18th in reply to Capt. Elliott. It is now clear, however, that, owing to the rapidity of demobilisation and to other circumstances, they are quite unreliable. No figures for 1919 are available for the Black Sea.

Area.	Annual rate per 1000 of strength.		
	1919.	1920.	January to June, 1921.
United Kingdom ..	[59]	48·30	38·03
Army of Rhine	[46]	188·64	148·90
Army of Black Sea ..	—	213·73	238·94

MONDAY, NOV. 7TH.

Import of Pure Milk Sugar.

Mr. LAMBERT asked the President of the Board of Trade if he was aware that one firm in this country uses from 25,000 to 30,000 gallons of milk per week in the preparation of infants' food and that pure milk sugar, an essential ingredient not produced in this country, was subjected to a 33⅓ import duty; and whether, seeing that such a duty would discourage milk production and increase the price of infants' food, he would at once cancel the duty.—Mr. MYERS asked the President of the Board of Trade whether sugar-milk, British Pharmacopœia, had been entered as liable for duty under Part I. of the Safeguarding of Industries Act; whether he was aware that this article was an essential

basis of all infant foods; whether, if the article was imported for making milk-stout, it was exempt from duty; if so, would he state the reason for this discrimination; and whether the advisability of removing this article from the list alt gether would be considered.—Mr. BALDWIN replied: Crude lactose, which is used in the manufacture of milk-stout, is not dutiable under any heading of the schedule to Part I. of the Safeguarding of Industries Act; the pure quality, which is used for the preparation of certain special foods, is dutiable as a fine chemical. As I have repeatedly stated, I have no power to exclude on any ground from the operation of the Act any commodity properly included within the general headings of the schedule, but the question whether lactose is properly so included can be referred to the Referee under Section 1 (5), and this, I understand, is being done.—Mr. LAMBERT asked whether the right hon. gentleman on May 12th last did not specifically state that food in the widest sense would be excluded from the schedule, and if so, why did he include it by administrative order?—Mr. BALDWIN said it was not correct to say that he had included food in the schedule by administrative order. The question whether refined lactose should come within the definition of food would be decided by the Referee.—Mr. LAMBERT: Is it not a fact that pure lactose is used in the preparation of infant food and surely it is a key industry?—Mr. BALDWIN: That is a matter for the Referee.

Medically Unfit Civil Servants.

Lieut.-Col. Sir SAMUEL HOARE asked the Secretary to the Treasury how many ex-Service temporary civil servants had been marked medically unfit for the permanent service.—Mr. HILTON YOUNG replied: The number of ex-Service candidates at the recent limited examinations who have been disqualified on medical grounds for permanent appointment is eight.

TUESDAY, NOV. 8TH.

Medical Stores for Russia.

On the report stage of a Supplementary Vote for the Foreign Office of £100,000 in respect of miscellaneous war services,

Lord R. CECIL said that the vote included a quantity of medical stores that were being sent to Russia. He wished to know a little more about the policy of the Government in this matter, and whether the Government still adhered to the view about the Russian famine expressed by the Prime Minister on August 15th, when he referred to it as an appalling catastrophe, and said that an international organisation ought to be set up to provide relief for Russia. Now the Government came to the House with a proposal not to send food to Russia, but medical supplies. He did not wish to underestimate the value of medical supplies, but the case was one of starvation, and if it was to be dealt with effectively, food should be sent.

Mr. CECIL HARMSWORTH (Under Secretary for Foreign Affairs), replying to the debate, said that the vote was something in the nature of a book-keeping arrangement, so that a quantity of medical stores, clothing, tinned meats, and other foodstuffs, in the possession of the Disposals Board, might be allocated for the purpose of relief in Russia in accordance with the decision of the Government. The value of these stores at present prices was perhaps something like £250,000. They were to be handed over, or have already been handed over, to the British Red Cross Society, to be allocated as they thought right, without any conditions whatever. He understood that the Red Cross Society was establishing bases at Riga and Novarissisk for the distribution of these stores. The Government were informed that these stores were perhaps the most useful they could contribute, but obviously they were by no means an adequate provision for the need represented by the large number of people who were now suffering from famine in Russia.

Approved Lunatic Asylums for Ex-Service Men.

Captain LOSEBY asked the Minister of Pensions the total number of lunatic asylums approved of by the Ministry of Pensions for ex-Service men and the number of such approved institutions which were run for private gain.—Mr. MACPHERSON replied: Approximately 240 institutions are under the control of, or have been approved by the Board of Control and the Ministry, and of these more than 60 are private establishments.

AT University College, London, and the Medical School of University College Hospital the celebration of the anniversary of the Armistice will be held to-day, Friday, Nov. 11th, at 10.45 A.M. precisely. The roll of honour will be read and the "Last Post" will be sounded, when after two minutes' silence the chairman of the War Memorial Committee will present the medical memorial tablet to the Dean of the Medical School, and the Slade Memorial Tablet to the chairman of the Slade Committee. The tablets will be open to inspection during the day.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Final Examination of the Conjoint Board, held from Oct. 4th to 21st, the following candidates were approved in the undermentioned subjects, but are not eligible for diplomas:—

Medicine.—A. R. Abdel Razik, Cairo; M. Bienenstock, Budapest; A. M. F. Browne, St. Mary's; T. H. Cathrall, Oxford and London; Dorothy J. Collier, Oxford and Univ. Coll.; Dorothy A. D. Cropper, King's Coll.; J. G. Drew, Cambridge and St. Thomas's; A. C. D'Souza, Manchester; M. A. El Biblawi, Guy's; Mary C. Elliot, Univ. Coll.; Ena D. Foster, St. Mary's; Dora J. Fox, London; J. E. Gaze, Charing Cross; Nancy K. Gibbs, Univ. Coll.; T. J. E. Gittins, Birmingham; Alice M. F. Goldman, Univ. Coll.; B. O. Hancock, Birmingham; T. H. J. Hargreaves, Charing Cross; M. C. Hartley, London; Hilda M. Haythornthwait, Royal Free; G. H. Hogben and B. D. Hughes, St. Bart.'s; A. O. Jones, Liverpool; E. M. Jones and J. N. Kerr, St. Bart.'s; Lorna Susan King, St. Mary's; H. D. Lawson, London; K. W. Leon, St. Bart.'s; F. H. Mather, Cambridge and London; C. O. Minasian, St. Mary's; W. H. Nettelfield, St. Bart.'s; G. B. Oliva, Liverpool; Hilda W. Page, Univ. Coll.; Edith C. Phelps, Royal Free; Ruth E. Pilgrim, London; Sybil M. Rees and H. R. Rishworth, Charing Cross; R. Salib, Manchester; Olive M. Salmon, St. Mary's; T. A. S. Samuel, London; Gladys M. Sandes, Royal Free; S. Sandler, London; Norah B. A. Sankey, St. Mary's; Ena M. Sansom, Royal Free; Patricia H. S. Shaw, St. Mary's; K. E. Shellshear, St. Bart.'s; Eleanor C. E. Stone, St. Mary's; H. J. V. Sutton, Middlesex; R. S. Swindell, London; and E. H. Weatherall, St. Bart.'s.

Midwifery.—Janet K. Aitken, Royal Free; Ruth M. Arkwright, St. Mary's; C. W. C. Bain, Oxford and St. Thomas's; G. W. Ballance, Birmingham; F. Bentham and H. C. Berlie, St. Mary's; M. Bienenstock, Budapest; Gwendolen M. Brown, Charing Cross; Margaret M. Brownstone, Univ. Coll.; Grace D. Chambers, St. Mary's; Anaple Frances M. Christie, Royal Free; F. S. Coleman, St. Bart.'s; Dorothy J. Collier, Oxford and Univ. Coll.; Florence E. Cowlin, Charing Cross; M. Critchley, Bristol; B. B. Dalal, London; D. B. D'Alwis, Ceylon and Middlesex; Nancy B. Daniell, King's Coll.; F. J. Darbyshire, Westminster; S. Dewar, London; B. Dous, St. Bart.'s; J. G. Drew, Cambridge and St. Thomas's; Beatrice E. Ebden, London; W. C. Faull, St. Mary's; W. W. J. Fernando and G. Fraser-Smith, Middlesex; R. M. Fry, St. Mary's; Hilda M. Garlick, Royal Free; F. A. Gaydon, St. Thomas's; Nancy K. Gibbs, Univ. Coll.; Janet V. Good, London; S. Gordon, St. Bart.'s; J. H. H. Gough, Cambridge and St. Thomas's; Elsie C. Griffin, Dublin and Charing Cross; F. J. S. Hall, St. Mary's; A. G. Hammond, Middlesex; Kathleen M. D. Harding, St. Mary's; T. I. Hardy, Moscow and Royal Free; Doris I. Harston and M. C. Hartley, London; J. K. Hasler, Middlesex; Hilda M. Haythornthwait, Royal Free; M. M. Hegab, Guy's; Edith W. W. Hind, Univ. Coll; W. E. Howell, St. Bart.'s; F. C. Hunt, London; Winifred M. Jenkins, Royal Free; A. Jephcott, Cambridge and St. Bart.'s; R. Jones, Birmingham; Hilda M. Kennedy, Univ. Coll.; J. N. Kerr, St. Bart.'s; D. Krestin, London; Gladys M. Lambourne, St. Mary's; B. L. Laver, Guy's; B. J. Leggett, London; A. Q. Logan and J. N. Loring, St. Thomas's; G. S. Lund, Cambridge and St. Thomas's; Mary C. Lynch, St. Mary's; A. N. Macbeth, Univ. Coll.; Caroline G. L. McHardy, Royal Free; M. Mackenzie, Guy's; Gladys H. Marchant, Calcutta; P. de R. Mason, St. Mary's; J. K. Milward, Guy's; N. R. Mucadam, Bombay and Royal Free; R. W. Nichol and C. P. Oliver, Cambridge and St. Thomas's; G. E. Peacock, King's Coll.; J. H. Piddock, Birmingham; L. E. Pimm, King's Coll.; I. N. O. Price, London; A. B. Rao, Middlesex; Sybil M. Rees, Charing Cross; Hilda E. Reynolds, Bristol; Z. Salama, Birmingham; Olive Metcalfe Salmon, St. Mary's; J. S. Salt, Charing Cross; E. F. Smith, St. Thomas's; N. R. Smith, Sydney; Emma M. Store, Royal Free; M. H. Summers, Middlesex; Mary I. Symons, London; H. W. Taylor, Cambridge and Guy's; W. J. Verheyden, Univ. Coll.; W. J. Vickers, Birmingham; A. J. Vickery, St. Mary's; Hygeia L. J. Wallace, Charing Cross; W. R. Ward, St. Bart.'s; F. W. Widgery, Guy's; Cordelia I. Williamson, Charing Cross; C. P. Wilson, Middlesex; and W. A. Young, St. Thomas's.

Surgery.—A. R. Abdel Razik, Cairo; S. Ackroyd, Leeds; W. F. Attwater, Cambridge and Guy's; Mary H. Y. Blakeston, Royal Free; W. R. Carling, Cambridge and Guy's; A. J. Chiappa, Middlesex; K. A. Darukhanawala, Bombay and St. Thomas's; Sheila Dewar, N. Gallant, and J. H. Gann, London; W. Girgis, St. Mary's; S. Gordon, St. Bart.'s; E. F. Griffith, St. Mary's; B. Kessel, Guy's; H. D. Llewellyn, Cardiff and St. Bart.'s; Caroline G. L. McHardy, London; G. G. Michell and R. E. Overton, Univ. Coll.; G. E. Peacock, King's Coll.; Evelyn V. Pilley, St. Mary's; L. E. Pimm, King's Coll.; A. E. Roche, Cambridge and St. Bart.'s; Gladys Rutherford, Liverpool; C. Satyaraju, Madras and London; Y. S. Soliman, St. Thomas's; E. C. A. Wilson, London; and A. D. Wright, St. Mary's.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The thirty-fourth annual general meeting of Fellows and Members will take place at the College, Lincoln's Inn-fields, W.C., on Thursday, Nov. 17th, at 3 P.M. The following resolutions

will be sent in to the President and Council on behalf of the Society of Members of the College :—

(1) "That this thirty-fourth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council of the College, which (as now constituted) only represents those Members who also hold the Fellowship; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation."

(2) "That as the Royal College of Surgeons is composed of about 18,000 persons, of whom over 16,000 are engaged in general practice, this annual meeting requests the President and Council to nominate *at least* two Members in general practice to represent the interests of general practitioners in the management of College affairs."

(3) "That this meeting of Fellows and Members earnestly requests the President of the College to make a detailed statement *here and now* as to all the reasons, legal and otherwise, for the Council persisting with a refusal to allow representation on the Council of the Members in general practice; and to state definitely whether legal advice has been taken as to any possible means of overcoming any difficulties in the way of carrying out our wishes; and, if so, to declare what that advice was."

THE sum realised at the Manchester University bazaar is stated to be likely to reach £15,000.

UNIVERSITY OF EDINBURGH.—On Nov. 4th the fourteenth annual dinner of Edinburgh University Graduates' Club was held at Tilley's Rooms, Newcastle. Dr. D. W. Inglis (Hebburn), president of the club, occupied the chair. The guest of the evening was Sir J. Alfred Ewing, F.R.S., Principal of the Edinburgh University. Amongst others present were Dr. David Drummond (Vice-Chancellor of the University of Durham and President of the British Medical Association), Dr. Harold Kerr (Medical Officer of Health for Newcastle and hon. treasurer of the club). The President proposed the toast of Alma Mater; in his reply Sir J. Alfred Ewing stated that a very satisfactory feature of university life was the keenness and energy with which men returned from the war had resumed their studies. The presence of women in the university, he thought, had done no harm. At Edinburgh they were now engaged in building what he considered would be the finest chemical laboratory in the country. Alluding to the expense of training, he remarked that the cost of education at Edinburgh had recently been found to be slightly lower than any other, and its efficiency was second to none. Last year the total Government grant to universities was increased to one and a half million sterling, but they had been told that the grant was to be diminished by £200,000 next year. Moreover, they had to do all they could themselves, and he urged the necessity for voluntary financial support. The toast of Sister Universities was given by Dr. J. Wilkie Smith, who said it was a great pity that two such colleges as Armstrong College and the College of Medicine in Newcastle should be hampered by want of funds. Responding, Dr. David Drummond paid a tribute to the "city of their adoption," and emphasised the need for men of sound common sense at the head of the universities.

UNIVERSITY OF BRISTOL.—An unusual means of awakening public interest in the necessity for increased monetary support of the universities has been utilised by the Appeal Director of the University of Bristol Appeal Fund, in the form of a 48-page pamphlet containing about 150 excellent sepia reproductions of photographs of the university, of its associate colleges and surroundings, and of scenes representing practically every side of university life. The claim is made in a footnote that "at no university in the world do students secure greater facilities for being brought into touch with the practical affairs of life." A sum of £10,000 has been received in support of this appeal from the Imperial Tobacco Co. (of Great Britain and Ireland), Ltd., Bristol, also a sum of £1000 from the Directors of the National Provincial and Union Bank of England, Ltd.

PAYMENTS BY HOSPITAL PATIENTS IN BRISTOL.—The two large general hospitals of Bristol have now had some little experience of the system inaugurated this year of collecting payments from patients to meet excessive financial strain. Speaking at the General Hospital the other day the chairman, Mr. Herbert M. Baker, explained that the sums collected from patients represented only a fraction of the total cost. The average cost per bed per week was over £3, while the sum asked from each patient is but one guinea per week. He was able to report the gratifying fact that contributions from workpeople had increased instead of falling off as had been expected. At the Royal Infirmary, whose president, Mr. Henry Wills, has just resigned owing to ill-health, the almoner reported that only one in five of the patients admitted is able to pay the small contribution asked for. It is therefore clear that some other form of collection of income must be devised if these institutions are to be established on a sound financial basis.

PHYLLIS SIEPMANN MEMORIAL PRIZE.—Miss Phyllis Siepmann, a daughter of a Clifton College master and a student in the Faculty of Medicine of Bristol University, recently died of septicæmia while acting as a surgical dresser at the Royal Infirmary. In her memory her brother, Mr. Henry Arthur Siepmann, has established an annual prize of the value of £50 for the third-year student at the infirmary who shall secure first place in an examination in medicine and surgery, with special reference to diseases of children.

DIPHTHERIA IN BRISTOL.—A memorandum issued by Dr. D. S. Davies (M.O.H. Bristol) and Dr. B. A. Peters (resident medical officer, Bristol City Fever Hospital, Ham Green) to medical practitioners in Bristol, calls attention to the occurrence within the city of cases of diphtheria of an unusually virulent type. The formation of membrane is much delayed, often till two or three days after the onset of œdema of the fauces and neck. Occasionally the fauces escape almost wholly, the infection attacking the naso-pharynx and provoking a sanious or purulent rhinorrhœa. The memorandum urges practitioners to give large doses of antitoxin as soon as symptoms are manifest. Few of the patients survive if this is delayed beyond the first 48 hours; early treatment is rendered the more necessary by the deceptive mildness of the initial symptoms. There is often no local pain, the child complaining only of headache or sickness, and pyrexia is usually slight and of brief duration. Cases of primary conjunctival and vulvar infection have been seen. A circular has also been issued to the local profession announcing that a demonstration of the disease will be given by Dr. Peters, who is also the university lecturer on Fevers, to any practitioners who apply for tickets to the Director of Post-Graduate Studies, Faculty of Medicine, University of Bristol.

THE ROYAL MEDICAL BENEVOLENT FUND GUILD.—A sale of Paris millinery, fancy articles, garden produce, and other useful and attractive commodities will be held at 9, Wetherby-gardens, London, S.W. 5, on Thursday next, Nov. 17th, from 10 A.M. to 6 P.M., in aid of the Royal Medical Benevolent Fund. It is hoped that readers of THE LANCET will bring this sale to the notice of their patients.

The Guild is a branch of the Fund, formed to assist distressed members of the medical profession, their wives, widows, or families by: (1) Personal service; (2) providing clothing; (3) giving educational or other help as recommended by the General Purposes Committee of the Guild; (4) promoting any other work which may seem desirable, or may be approved by the Executive Committee of the Fund; (5) by gifts of money. Clothing is urgently required for men, children, and ladies, both old and young—especially the latter; and there are numerous directions in which any money realised by the sale can be expended usefully. The visiting secretary of the Fund investigates all cases and reports to headquarters, who, on being satisfied, allocate the suitable form of aid. Communications may be addressed to Mrs. Violet L. C. Cotton, at 9, Wetherby-gardens, S.W.

POOR-LAW REFORM IN IRELAND.—During the past six months an extensive and far-reaching reform of Poor-law administration has been going on in the greater part of Ireland. The county councils and other local authorities in nearly all southern Ireland had repudiated the authority of the Local Government Board and had been deprived of the Treasury grants ordinarily paid for health services. Acting on the advice of the Local Government Department of Dail Earann, the several authorities in each county came together and in conference decided on a scheme of Poor-law and health reform for their county. Most of the counties in the three southern provinces of Ireland have now constructed their schemes, and are gradually getting them into working order. Much local opposition has been avoided owing to the poverty of the local authorities consequent on the diversion of the Treasury grants, and Dail Earann has taken skilful advantage of this poverty to press forward its schemes of reform. Although the schemes in the different counties vary somewhat in detail, they are in general conformity to one model. All workhouses as such are abolished, and one county home is established to house the aged or infirm inmates of the workhouses. Boarding-out of children is encouraged, but in some counties there is provision for a children's home. The hospital system of the county is to be organised on the basis of one county hospital in each county, with, in large counties, one or more district hospitals. The Poor-law medical relief system is not altered. The administrative area is to be the county. Our Irish Correspondent adds: On the whole, the reforms appear to be on sound lines, and are very similar to those proposed last year by the Irish Public Health Council and 15 years ago by the Vice-Regal Commission. The chief drawback in the present reforms is that they are on a county, not on a national basis.

St. Bartholomew's Hospital was represented by a series of tableaux in the Lord Mayor's Show on Nov. 9th.

SOCIETY OF M.O.H.'S: TUBERCULOSIS MIDLAND SUB-GROUP.—The second general meeting of this sub-group will be held at the Anti-Tuberculosis Centre, 44A, Broad-street, Birmingham, on Dec. 3rd, at 3 P.M. All members of the society are invited to attend. The agenda will include the presidential address: Some Remarks on the Differential Diagnosis of Pulmonary Tuberculosis; confirmation of the committee's selection of two representatives to the central council; and arrangements of dates and places for future meetings.

MALTHUSIAN LEAGUE.—On Nov. 9th a pre-maternity, maternity, and child welfare centre will be opened at 153A, East-street, Walworth, London, S.E., by the League. Two doctors and a doubly certificated nurse will be available at this clinic, where medical advice will include instructions on matters of restriction and spacing of births whenever the circumstances clearly indicate that on medical, hygienic, eugenic, or economic grounds such instruction is necessary.

LADIES' MEDICAL GOLFING SOCIETY.—A successful meeting was held at Oxhey Golf Club on Nov. 8th. In the morning a medal round was played. Mrs. V. Hetherington won the scratch prize with a score of 94; the prize presented by Mrs. Lewis Smith for the best net score was won by Mrs. E. H. Kettle with a score of 83, and Lady Rigby's prize for the best net score in the senior division was won by Miss Edith Adams with a score of 85. In the afternoon a nine-hole foursomes competition against bogey resulted in a tie between Mrs. Grainger Harrison and Miss M. Marshall (1 down) and Lady Goadby and Mrs. W. F. Pedler (1 down).

CHELSEA CLINICAL SOCIETY.—The annual dinner was held at the Café Royal, Piccadilly, on Oct. 25th. Sixty-five members and guests were present. In proposing the health of the society, Mr. James Berry, the President of the Medical Society of London, congratulated the Society on its attaining its majority on that evening and on the good work done at its meetings. Dr. D. M. Barcroft, the President, replied, and later proposed the health of the guests, to which toast Sir Lenthal Cheatle, the President of the West London Medico-Chirurgical Society, Mr. Russell Howard, and the President of the Hunterian Society replied. Dr. G. de Bec Turtle, President of the Harveian Society, proposed the health of the President of the Chelsea Clinical Society, and Dr. Barcroft responded.

ULSTER MEDICAL SOCIETY.—The opening meeting of the session was held on Nov. 3rd. Dr. T. Houston, the outgoing president, took the chair at the beginning of the proceedings, and introduced his successor, Dr. Robert Hall, who proceeded to deliver his inaugural address on "Unusual Cases of Pulmonary Disease." The address contained a digest of the speaker's experience. The President subsequently unveiled a tablet containing the names of the members of the Society who had served in the late war, the gift of Dr. H. L. McKisack. A vote of thanks to the donor was cordially passed on the motion of Prof. J. A. Lindsay, seconded by Prof. R. J. Johnstone.

LITERARY INTELLIGENCE.—A new series of volumes to be published by Messrs. George Routledge and Sons, under the title Twentieth Century Chemistry, is in preparation under the editorship of Sir William Tilden, D.Sc., F.R.S., Emeritus Professor in the Imperial College of Science and Technology, South Kensington, and Dr. J. C. Philip, F.R.S., Senior Secretary of the Chemical Society and Professor of Physical Chemistry in the Imperial College. The intention is to provide works of moderate size and price, which, without being exhaustive monographs, will furnish advanced students with a complete survey of the present state of knowledge and opinion in each branch of the science. Several distinguished British and foreign chemists have promised to contribute volumes to the series.

AUXILIARY ROYAL ARMY MEDICAL CORPS FUNDS. The usual quarterly committee meeting was held on Oct. 28th, at 11, Chandos-street, London, W. Six grants were made to cases in the benevolent branch for the orphans of officers, amounting to £158, and 46 grants in the relief branch for widows and orphans of the rank and file, amounting to £1366. These funds exist for the relief of widows and orphans of commissioned officers, non-commissioned officers, and men of the rank and file of the Royal Army Medical Corps, Special Reserve, Territorial Force, and New Armies, and also for the relief of those who have been so severely damaged in the late war that they need help for the education of children. Requests for relief should be addressed to the hon. secretary at the offices of the funds, 11, Chandos-street, Cavendish-square, London, W. 1.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting will be held in the board-room of the Miller General Hospital, Greenwich, to-day, Friday, at 8.45 P.M. Dr. C. T. T. Comber, the president, will occupy the chair and Mr. P. B. Roth will deliver an address on Treatment of Fractures.

DUBLIN UNIVERSITY BIOLOGICAL ASSOCIATION.—The opening meeting of the Dublin University Biological Association was held last Saturday evening, when Dr. J. Speares, President, read a paper on Some Experiences of Vaccine Therapy. The paper was discussed by Drs. A. C. O'Sullivan, J. T. Wigham, H. S. Sugars, and Mr. K. L. G. Gunn.

SAFEGUARDING OF INDUSTRIES ACT.—The Board of Trade have received a formal notice of complaint from the Eastern and Russian Trading Company, of 8, Drapers-gardens, Throgmorton-avenue, London, E.C. 2, that santonine has been improperly included in the lists of articles chargeable with duty under Part I. of the Act.

NATIONAL PROVIDENT SCHEME.—A meeting, open to all members of the medical profession and specially to the medical staffs of hospitals, arranged by the Marylebone Division of the British Medical Association, will be held at 8.30 P.M., on Nov. 16th, at 11, Chandos-street, London, W., when Mr. W. McAdam Eccles will move: "That this meeting of medical practitioners in the Marylebone Division of the British Medical Association approves in general of the National Provident Scheme for Hospital and Additional Medical Services," and Dr. C. O. Hawthorne will oppose. Thereafter discussion will be open.

HONOUR TO A MEDICAL MAN.—The town council of Oldham has resolved unanimously to confer the honour of the freedom of the borough upon Dr. Thomas Fawsitt, who for over half a century has rendered service to the citizens of Oldham as a surgeon in the Royal Infirmary, for some time chairman of its governors, and in his extensive private practice before his retirement. Dr. Fawsitt still continues to take a lively interest in the infirmary. A public subscription is being set on foot to raise funds to endow a bed in the infirmary to commemorate his name.

THE LATE DR. R. P. WOODROOFE.—Richard Percy Woodroofe, who died at Eccleshill, Bradford, on Oct. 24th, aged 58, came of a family of doctors and was born at Dublin, where he received his early education. He also studied at Yorkshire College, and in 1884 qualified with the L.A.H. Dub. and the L.M. of the Coombe Hospital. Ten years later he obtained the L.R.C.S.I. and L.M. Starting his medical career as surgeon and medical assistant at the Mercers Hospital, Dublin, he settled in Yorkshire, becoming medical officer at Eccleshill, and taking a full share in local medical politics.

N.C.C.V.D. SCOTTISH COMMITTEE.—A Conference of representatives of the local authorities of Scotland is to be held in the City Chambers, Glasgow, on Friday, Dec. 2nd, to discuss various aspects of the venereal diseases problem preparatory to the undertaking of an active educational campaign throughout the country. The Conference is being organised by the Scottish Committee of the National Council, of which Dr. McGregor-Robertson is chairman and Mr. W. E. Whyte secretary. Sir Malcolm Morris, a vice-president of the Council, Sir Leslie Mackenzie, medical member of the Scottish Board of Health, and other prominent representatives of Local Government activities in Scotland, will take part in the proceedings, over which Lord Provost Paxton presides.

HARROGATE MEDICAL SOCIETY.—The second meeting of the session was held at the clinical laboratory, by permission of Dr. Sinclair Miller and Dr. F. B. Smith, on Oct. 20th. Dr. A. Mantle presided and there was a large attendance of members. Part of the evening was devoted to the examination and discussion of pathological specimens from recent cases of clinical interest. Dr. Miller read a paper on Basal Metabolism, and this was followed by a demonstration of the Portable Benedict Apparatus by Mr. Kendrick, of the Sanborn Company, London. Dr. W. Bain, Dr. W. Edgecombe, Dr. G. W. S. Saberton, Dr. Bertram Watson, and others discussed the paper and the value of the apparatus as applied to clinical work.—At a meeting on Nov. 3rd a paper was read by Mr. A. B. Pavey-Smith, F.R.C.S., entitled Some Remote Effects of Tonsillitis. The evidence, experimental and clinical, pointing to the tonsil as an important focus of infection in systemic disease was reviewed, and the diagnosis of latent chronic tonsillitis described. A discussion followed, concerned especially with arthritis and its connexion with tonsillar infection.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Tuesday, Nov. 15th.

GENERAL MEETING OF FELLOWS: at 5 P.M.
Ballot for Election to the Fellowship. (Names already circulated.)

Wednesday, Nov. 23rd.

OCCASIONAL LECTURE: at 5 P.M.
Dr. Gustave Monod: Syphilis of the Stomach. A Discussion will follow in which it is hoped the following will take part: Dr. Charles Bolton, Dr. A. F. Hurst, Dr. J. W. McNee, Sir Berkeley Moynihan, Mr. Herbert Paterson, Mr. J. Sherren, and Mr. A. J. Walton. There will also be an Exhibition of Rare Specimens.

MEETINGS OF SECTIONS.

Monday, Nov. 14th.

WAR: at 5.30 P.M.
Dr. W. Wallace: An Epidiascopic Demonstration of War Injuries on the Fundus of the Eye.

Tuesday, Nov. 15th.

PATHOLOGY: at 8.30 P.M.
Dr. W. E. Gye and Dr. W. J. Purdey: The Poisonous Properties of Colloidal Silica.
Mr. A. T. Glenny and Miss Allen: A Guinea-pig Epizootic Associated with Dietary "Deficiency."
Professor F. Hobday: Cleft Palate in Animals, with Specimens and Illustrations.
Mr. J. B. Buxton and Mr. A. T. Glenny: Active Immunisation against Tetanus in Horses with Toxin-antitoxin Mixtures.
Dr. H. J. Sudmersen and Dr. Eagleton: Standardisation of Dysentery Serum, Protective and Agglutinating Antibodies.

Wednesday, Nov. 16th.

HISTORY OF MEDICINE: at 5 P.M.
At the Historical Medical Museum, 54a, Wigmore-street, W.
Papers: Dr. Charles Singer (President): Demonstration of Museum Specimens, illustrating Ancient Greek Medicine.
Dr. M. B. Ray: Egyptian Deities associated with Healing.

TROPICAL DISEASES AND PARASITOLOGY: at 8.30 P.M.
(1) A description of the Oöcysts of *Eimeria Oxyspora* Dobell, 1919, with clinical notes of a new case: *Embadomonas intestinalis* (Wenyon and O'Connor) 1917; description of the cysts and free forms with clinical notes of a new case: by Dr. W. Broughton Alcock and Dr. J. Gordon Thomson.
(2) A demonstration and notes on Helminth: by Prof. R. T. Leiper, Dr. M. Khalil, and Mrs. Philpots, M.Sc.

Thursday, Nov. 17th.

DERMATOLOGY: at 5 P.M. (Cases at 4.30 P.M.)
Cases will be shown.

Friday, Nov. 18th.

OTOLOGY: at 5 P.M. (Cases at 4.45 P.M.)
Cases will be shown by Dr. Dan McKenzie, Mr. Sydney Scott, and others.
Communications by Mr. Sydney Scott and Mr. E. D. D. Davis.
Short Papers by Dr. A. A. Gray (with Lantern-slide Demonstration) and by Mr. A. R. Tweedie.

ELECTRO-THERAPEUTICS: at 8.30 P.M.
Dr. Frans Daels (of Ghent): (1) Histological Pictures of the Curing of Uterine Baso-cellular Epithelioma (with micro-photos). (2) The Irradiation of the True Pelvis with the Help of Drainage Tubes (with Diagrams).
Dr. G. Fildes: Further Remarks on the Potter-Bucky Diaphragm.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Nov. 14th.—8 P.M. Clinical Evening. Cases will be exhibited by the following:—Mr. James Berry, Sir John Broadbent, Sir William Willcox, Dr. F. J. Poynton, Mr. Donald Armour, Mr. T. P. Legg, Mr. Herbert W. Carson, Dr. C. E. Lakin, Mr. Z. Cope, Dr. T. Izod Bennett. Cases will be exhibited from 8 to 9 P.M., after which a Discussion will take place.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester-sq.
TUESDAY, Nov. 15th.—4.30 P.M., Agenda: Pathological Specimens, and Cases sent for Consultation. Clinical Cases. Dr. J. L. Bunch: Lupus Erythematosus, Syphilis. Dr. W. Griffith: Diffuse Scleroderma, Acute Cutaneous Syphilide. Dr. M. G. Hannay: Granuloma Annulare. Dr. E. J. D. Mitchell: Syphilis. Dr. S. R. Kapoor: Pityriasis Rubra Pilaris. Dr. W. K. Sibley: Lupus Erythematosus.

MEDICO-LEGAL SOCIETY, 11, Chandos-st., Cavendish-sq., W.
TUESDAY, Nov. 15th.—8.30 P.M. Paper:—Dr. T. Good: Nature *versus* Law, with special reference to the Development of Psychotherapy and its Problematical Use in the Treatment of Feeble-minded Persons and Criminals (followed by Discussion).

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.
THURSDAY, Nov. 17th.—8.15 P.M. *A Laboratory Meeting* will be held at the London School of Tropical Medicine, Endsleigh-gardens, N.W. Dr. Broughton-Alcock, Dr. J. G. Thomson, Colonel A. Alcock, Dr. P. Manson-Bahr, Prof. R. Leiper, Major H. C. Brown, Dr. A. C. Stevenson, Dr. S. H. Daukes, Dr. C. Morley Wenyon, and others will give Demonstrations.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.
The Annual General Meeting of the Fellows and Members will take place at the College on Thursday, Nov. 17th, at 3 P.M.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Nov. 14th.—12.15 P.M., Dr. Burnford: Pathological Demonstration. 2 P.M., Mr. Addison: Visit to Surgical Wards. Dr. Scott Pinchin: Medical Out-patients. Dr. Simson: Diseases of Women. 2.30 P.M., Dr. Arthur Saunders: Visit to Medical Wards. 5 P.M., Mr. Donald Armour: Practical Surgery (Lecture V.).
TUESDAY.—11 A.M., Dr. McDougal: Electrical Department. 12 noon: Mr. Sinclair: Appendicitis (Lecture). 2 P.M., Dr. Burrell: Medical Out-patients. Dr. Pernet: Skin Department. Dr. Morton: X Ray Department. 2.30 P.M., Mr. Tyrrell Gray: Demonstration of Cases (Surgical Wards). 5 P.M., Mr. Banks Davis: Nasal Catarrh (Lecture).
WEDNESDAY.—11 A.M., Mr. MacDonald: Demonstration of Cystoscopy. 12 noon, Mr. Simmonds: Demonstration of Fractures. 2 P.M., Mr. Tyrrell Gray: Operations. Mr. Gibb: Eye Department. Dr. Burnford: Visit to Medical Wards. 5 P.M., Mr. Donald Armour: Practical Surgery (Lecture VI.).
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 12 noon, Dr. Scott Pinchin: Diseases of the Heart (Lecture). 2 P.M., Mr. MacDonald: Surgical Out-patients. 5 P.M., Dr. Simson: Modern Developments in the Management of Labour (Lecture I.).
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations and Visit to Wards. Mr. Dudley Buxton: Dental Department. 2 P.M., Mr. Sinclair: Surgical Out-patients. Mr. Banks Davis: Diseases of the Throat, Nose and Ear. Mr. Addison: Operations. 2.30 P.M., Dr. Pritchard: Demonstration of Cases (Medical Wards). 5 P.M., Dr. Burrell: Sanatorium Treatment.
SATURDAY.—10 A.M., Dr. Arthur Saunders: Medical Diseases of Children. Mr. Simmonds: Orthopædic Department. 2 P.M., Dr. Owen: Medical Out-patients.
Daily:—10 A.M., Visit of Post-Graduates to Wards. 2 P.M., In-patient, Out-patient Clinics and Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Nov. 14th.—10 A.M., Mr. W. E. Tanner: Surgical Out-patients. 2.30 P.M., Dr. A. J. Whiting: Demonstration in Medical Wards. Mr. E. Gillespie: Surgical Operations. Dr. J. B. Alexander: Medical Out-patient. Mr. J. Bright Banister: Gynæcological Out-patients. Dr. Shanks: X Ray Department. 4.30 P.M., Mr. J. Bright Banister: The Toxæmias of Pregnancy. 7 P.M., Dr. F. L. Provis and Mr. T. H. C. Benians: Venereal Department.
TUESDAY.—9.45 A.M., Lt.-Col. R. H. Elliot: Eye Cases and Operations. 2 P.M., Mr. J. Howell Evans: Surgical Out-patients. 2.30 P.M., Mr. H. W. Carson: Surgical Operations. Mr. C. H. Hayton: Throat, Nose and Ear Out-patients. Dr. J. Metcalfe: X Ray Department. Dr. L. Yealland: Medical In-patients. 3 P.M., Mr. J. Howell Evans: Surgical In-patients.
WEDNESDAY.—2 P.M., Mr. C. H. Hayton: Throat Operations. 2.30 P.M., Dr. J. B. Alexander: Medical Out-patients. Dr. W. Jenkins Oliver: Skin Cases. 5 P.M., Dr. F. L. Provis and Mr. T. H. C. Benians: Venereal Department.
THURSDAY.—2.30 P.M., Mr. J. Bright Banister: Gynæcological Operations. Dr. A. J. Whiting: Medical Out-patients. Mr. H. W. Carson: Surgical Out-patients. Dr. J. Metcalfe: X Ray Department. Mr. N. F. Fleming: Eye Out-patients.
FRIDAY.—2 P.M., Mr. J. Howell Evans: Surgical Operations. 2.30 P.M., Dr. C. E. Sundell: Children Out-patients. Mr. E. Gillespie: Surgical Out-patients. Dr. Shanks: X Ray Department. 4.30 P.M., Mr. E. Gillespie: The Treatment of Paralysis by Orthopædic Methods. 5 P.M., Dr. F. L. Provis and Mr. T. H. C. Benians: Venereal Department.
SATURDAY.—10.30 A.M., Mr. W. E. Tanner: Surgical Operations. 3 P.M., Mr. H. W. Carson: Visit to Surgical Wards.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART POST-GRADUATE COURSE, Westmoreland-street, Marylebone, W.
MONDAY, Nov. 14th.—11 A.M., Dr. Goodall: Out-patients. 2 P.M., Dr. Moon: In-patients. 5.30 P.M., Lecture:—Dr. Price: Depressed Conductivity: Heart Block.
TUESDAY.—10 A.M., Dr. Parsons-Smith: Out-patients. 10 A.M., Dr. Price: In-patients. 2 P.M., Sir S. Russell-Wells: Out-patients.

WEDNESDAY.—10 A.M., Dr. Parkinson, and 2 P.M., Dr. Moon: Out-patients.
THURSDAY.—2 P.M., Dr. Price: Out-patients. Dr. Moon: In-patients. 6.30 P.M., Dr. Hamill: Out-patients.
FRIDAY.—10 A.M., Dr. Parsons-Smith: Out-patients. 2 P.M., Dr. Parkinson: Out-patients. 3 P.M., Dr. Parkinson: In-patients. 4 P.M., Dr. Goodall: In-patients.
SATURDAY.—10.30 A.M., Dr. Hamill: In-patients.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Nov. 17th.—4 P.M., Lecture:—Dr. F. J. Poynton: Medical Calamities in Childhood.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.
THURSDAY, Nov. 17th.—6 P.M., Chesterfield Lecture:—Dr. W. K. Sibley: Electrical Treatments, Ionisation, &c.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, Nov. 15th.—4.30 P.M., Dr. C. H. Melland: Prognosis and Treatment of Pernicious Anæmia.

ST. MARY'S HOSPITALS POST-GRADUATE LECTURES, at Whitworth-street, West Branch, Manchester.
FRIDAY, Nov. 18th.—4.30 P.M., Mr. Morley: Abdominal Tuberculosis.

MANCHESTER FRENCH HOSPITAL POST-GRADUATE LECTURES, 24, Acomb-street, Whitworth Park.
THURSDAY, Nov. 17th.—4.15 P.M., Dr. A. C. Magian: Sexual Debility.

SALFORD ROYAL HOSPITAL.
THURSDAY, Nov. 17th.—4.30 P.M., Mr. R. Ollerenshaw: Demonstration of Orthopædic Cases.

UNIVERSITY OF SHEFFIELD.—FACULTY OF MEDICINE. Post-Graduate Lectures and Demonstrations.
TUESDAY, Nov. 15th. (At the Royal Infirmary).—3.30 P.M., Prof. A. M. Connell: Fractures. 4.15 P.M., Dr. A. G. Yates: Asthma.
FRIDAY. (At the Royal Infirmary).—3.30 P.M., Dr. A. E. Barnes: Demonstration of Cases. 4.15 P.M., Mr. W. S. Kerr: Demonstration of Cases.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.
A Course of Eight Lectures and Discussions on Problems of Public Health in Relation to Industrial Hygiene at the Lecture Theatre of the Institute.
WEDNESDAY, Nov. 16th.—4 P.M., Lecture V.:—Prof. S. Lyle Cummins: Tuberculosis in Relation to Industry.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF SCOTLAND.
FRIDAY, Nov. 18th, at the Royal College of Physicians of Edinburgh, Queen-street, Edinburgh.—3 P.M., Dr. Haydn Brown on Neuroinduction.

Appointments

BANKS, C., M.B., B.S. Lond., has been appointed Medical Officer of Health for Halifax.

WHITEHOUSE, BECKWITH, M.S. Lond., F.R.C.S., Assistant to the Chair of Midwifery and Diseases of Women, University of Birmingham.

Manchester Royal Infirmary: STAFFORD, H., M.B., Ch.B. (Vict.) and PHILBIN, E., M.B., Ch.B. (Vict.), House Physicians; FISHER, T. N., M.B., Ch.B. (Vict.), COOPE, J. E., M.B., Ch.B. (Vict.), and ASHCROFT, G. V., M.B., Ch.B. (Vict.), House Surgeons; POWELL, W. E., M.B., Ch.B. (Vict.) and WILLIAMSON, R., M.B., Ch.B. (Vict.), House Surgeons for Specials Department; RYRIE, B. J., M.B., Ch.B. (Edin.), Assistant Pathologist.

Vacancies.

For further information refer to the advertisement columns.

Aberdeen, Royal Hospital for Sick Children.—Hon. S.
Ashford, Kent, West Ashford Union.—Dist. M.O., &c. £350.
Aylesford, Kent, Preston Hall Training Colony.—Asst. M.O. £600.
Bedford County Hospital.—Asst. H.S. £150.
Bridge of Weir, Consumption Sanatoria of Scotland.—Res. Asst. M.O. £200.
Brighton Education Committee.—Female Asst. Sch. Doctor. £500.
Brighton, Royal Sussex County Hospital.—H.S. £140.
Bristol General Hospital.—Cas. H.S. £175.
Burslem Haywood Hospital.—Res. M.O. £200.
Bury Infirmary.—Junior H.S. £150.
Cambridge, John Bonnett Clinical Laboratory.—Clin. Path. £300.
Cardiff, King Edward VII. Hospital.—H.S. £200.
Cardiff, University of South Wales and Monmouthshire.—Lecturer in Path. and Bact. £750.
Carlisle, Cumberland Infirmary.—Res. M.O. £180.
City of Westminster Union Infirmary, 369, Fulham-road, S.W.—Second Asst. M.O. £300.
Devizes, Wilts County Asylum.—Asst. M.O. £350.
Durham County Council.—Asst. Welfare M.O. £600.
East London Hospital for Children, &c., Shadwell, E.—H.S. £125.
Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Asst. H.S. £150.
Great Northern Central Hospital, Holloway, N.—H.S. £150.
Greenwich, Dreadnought Hospital.—H.S. £150.
Guildford, Royal Surrey County Hospital.—H.S. £150.
Hampstead General and North-West London Hospital, Haverstock-hill.—H.P., H.S., Cas. M.O. and Cas. Surg. O. Each £150. Also Dermatologist.
Hull Royal Infirmary.—Hon. Pathologist.
Leamington Spa, Warneford, &c., General Hospital.—Res. H.P. £150.
Leeds, Ministry of Pensions Hospital, Becketts Park.—Jun. M.O £350.
Lincoln County Hospital.—Jun. H.S. £150.
Manchester, County Asylum, Prestwich.—Asst. M.O. £528 18*s.*
Manchester, St. John's Hospital for the Ear.—Anæsthetist. £50.
Manchester, St. Mary's Hospitals for Women, &c.—Two H.S.'s. Each £100.
Margate, Royal Sea Bathing Hospital.—S. £200.
Metropolitan Ear, Nose and Throat Hospital, 2, Fitzroy-square.—Two Sen. Clin. Assts.
Middlesbrough, North Riding Infirmary.—Sen. H.S. and Jun. H.S. £200 and £150.
Mothers' Hospital, Lower Clapton-road, E.—Res. M.O.
Newport, Mon., Royal Gwent Hospital.—H.S. £200.
Norfolk County Council.—Asst. Tuberc. O. £550.
Nottingham General Hospital.—H.S. £200.
Perth Royal Infirmary.—Jun. Res. M.O. £150.
Portsmouth Royal Hospital.—Third H.S. £150.
Prince of Wales's General Hospital, Tottenham.—Hon. Surg. Reg.
Royal London Ophthalmic Hospital.—Refraction Asst. £100.
Royal Naval Medical Service.—Surg. Lieuts.
St. Peter's Hospital, Henrietta-street.—Two Hon. Asst. Surgs.
Samaritan Free Hospital for Women, Marylebone-road, N.W.—H.S. £100.
Shanghai Municipal Council.—Asst. Health Officer. £1540.
Sheffield Royal Infirmary.—H.P. and Asst. Cas. O. £150.
Staffordshire General Infirmary, Stafford.—H.S. £250.
Sunderland, Royal Infirmary. H.P. £200.
Ventnor, Royal National Hospital for Consumption.—Asst. Res. M.O. £300.
Virginia Water, Surrey, Holloway Sanatorium.—Jun. Asst. M.O. £400.
West London Hospital, Hammersmith-road, W.—Hon. Surg. Registrar.
Western Ophthalmic Hospital, Marylebone-road.—Two Hon. Asst. Surgs.
Wokingham, Berks, Pinewood.—Med. Supt. £600.
York County Hospital.—H.P. £150.

The Chief Inspector of Factories, Home Office, S.W., announces the following vacant appointments: Broughty Ferry (Forfar), Inverary (Argyll), and Peterhead (Aberdeen).

Births, Marriages, and Deaths.

BIRTHS.

LAWRY.—On Nov 3rd, at "The Red House," Falmouth, the wife of J. Littleton Lawry, M.D., B.S. (Lond.), of a daughter.

MARRIAGES.

HODGSON—GREIG.—On Nov. 5th, at the Parish Church, Pyrford, Surrey, R. G. Keith Hodgson, M.B., B.S., to Dorothy Margaret Greig, second daughter of Mr. and Mrs. H. F. Greig, of Haverstock Hill, N.W.

DEATHS.

EVATT.—On Nov. 5th, at Earl's Court-square, S.W., Major-General Sir George Joseph Hamilton Evatt, K.C.B., late R.A.M.C., aged 77.

GOLD.—On Nov. 4th, suddenly, at Rydal Mount, Hereford, David Drybrough Gold, M.D., M.O.H. for Herefordshire, aged 48.

SMART.—On Nov. 5th, after an operation, at Birmingham, William Herbert Smart, M.A., M.B., aged 59.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE LANCET: SUBSCRIPTION RATES.

INLAND	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	£2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Subscriptions may commence at any time, and are payable in advance. Cheques and P.O.'s (crossed "London County Westminster and Parr's Bank, Covent Garden Branch") should be made payable to THE MANAGER, THE LANCET Offices, 423, Strand, London, W.C. 2.

ADVERTISEMENT RATES.

Books and Publications .. ..
Official and General Announcements } Four Lines
Trade and Miscellaneous Advertisements } and under 6*s.* 0*d.*
.. ..

Every additional line, 1*s.* 6*d.*

Quarter Page, £3. Half a Page, £6. Entire Page, £12.

Special Terms for Position Pages.

Notes, Short Comments, and Answers to Correspondents.

GASTRIC RESPONSE TO FOODS.

THE subject of gastric response to foods is being investigated in the Jefferson College of Philadelphia jointly by several observers, including R. J. Miller, O. Berheim, R. E. Martin, and P. B. Hawk, and their results are published in the *American Journal of Physiology*, Vols. LII. and LIII. The psychic secretion of gastric juice in normal men forms part of the series. It is easy to make the mouth water, and no one who has ever read Elia's "Dissertation Upon Roast Pig" can ever forget Lamb's inimitable description of the first accident of the kind that befel Bo-bo, son of the swineherd Ho-ti, when he smelt the smell of roast pig—when an odour assailed his nostrils, unlike any scent which he had before experienced. A premonitory moistening at the same time overflowed his nether lip. He did not know what to think. He ate crackling for the first time, discovered that roast pig tasted delicious, and surrendered himself up to the new-born pleasure. Nor must we forget to record the tickling pleasure which the graceless whelp Bo-bo experienced in his lower regions. But there are other psychic secretions besides those of the salivary and lachrymal glands. A well-set-out table, bedecked for dinner with properly and tastily cooked viands, causes a secretion of gastric juice, whilst unappetising food excites no response. Tasting or chewing alone is not effective without the scent or sight of food. Even the thought of a luscious grilled beefsteak excites marked secretion of gastric juice, which may be arrested by disagreeable odours. Chinese-preserved eggs with their, to us, repulsive and disagreeable smell and taste, delay the acid-formation and prolong the time of emptying of the stomach. Reading a newspaper at a meal does not seem to change the gastric secretion, but, on the other hand, mental irritation and worry have a distinct influence thereon. The effect of water, tea, coffee, and cocoa on the digestion of a meal consisting of beefsteak, mashed potatoes, toast and butter was studied, the acidity and the time the food remained in the stomach being noted. The latter was scarcely altered after drinking a litre of cold water, cold or hot tea, hot coffee, pure, with cream, or with cream and sugar. Much sugar added to coffee delays the emptying of the stomach. Water, tea (hot or cold), hot coffee with or without milk, or cocoa in quantities of about a litre diminish the acid formation as compared with a meal without the addition of fluid, while a litre of tea or coffee increases the heart beat and pulse considerably, causes a fall of blood pressure and certain nervous symptoms. Cocoa does not cause these symptoms, but leads to a feeling of distension or fullness of the stomach. The amount of urine excreted 90 minutes after taking tea or coffee was 550–860 c.cm. and after cocoa 125–372 c.cm.

The response of the human stomach to pies, cakes, and 50 different varieties of puddings was also studied. The stomach is emptied on the average 2 hours 18 minutes after partaking of pudding, 2 hours 27 minutes after pies, and 3 hours 2 minutes after cakes. Meat pies leave the stomach after 2¼–3¼ hours, the fruit variety after a shorter period. The crust of the pie lingers longer in the stomach than do the contents of the pie, but the mode of preparation of the crust plays an important part. Puddings to which gelatin is added leave the stomach very quickly, exciting a small acid-formation, while puddings rich in proteins (bread pudding) give a higher acid value. As to sugar, candies, and other sweetmeats, large doses (100 g.) of cane or grape sugar in concentrated solution diminish considerably the gastric secretion and delay emptying of the stomach, whilst small doses (10 g.) seem to have no action. Sweetmeats diminish the secretion and delay the emptying of the stomach, and this to a greater or less extent according to their sugar content. The result is affected by the presence of aromatic substances, and especially by the addition of milk, eggs, or chocolate, which excite the gastric secretion. Sweetmeats should thus never be eaten before a meal.

BABY MANAGEMENT.

A NEW book on the management of the baby during its first year needs to be exceptionally good to justify its appearance in the present day when such books abound. The small pamphlet by Mrs. J. Langton Hewer, which has just been published,[1] entitled "The Baby of To-day," may fairly claim a place among these on the score of merit, the teaching being throughout consistently sound and practical. The 24 pages contain most of the essential points in the management of infants, including hints on nursing, food, clothing, cleanliness, sleep, exercise, the formation of good habits, and general training, the whole forming a useful guide to nurses and baby-minders in general, while its moderate price brings it within the reach of all. The pamphlet deserves a wide circulation.

[1] Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co. Price 4*d*. net.

A REGISTER OF MASSEUSES AND MASSEURS.

THE Chartered Society of Massage and Medical Gymnastics has issued a register (St. Clement's Press, Ltd., price 3*s*. 6*d*.) of its members which will appeal to medical men who wish to prescribe massage, medical gymnastics, or medical electricity for their patients and have no personal knowledge of persons competent to administer such treatment. The register consists of an alphabetical list (91 pages) of masseuses, with addresses and any additional qualifications registered, followed by a similar list (7 pages) of masseurs. The concluding 34 pages are devoted to a place-index which will be found extremely useful.

FOOD VALUE OF WHITE FLOUR.

A MEMORIAL is being organised by the Bread and Food Reform League to the Minister of Health suggesting that the food leaflet to be published by the Ministry should make direct reference to the mineral content of oatmeal and whole-wheatmeal, the necessity of grinding them in a digestible form, and the importance of the germ being retained in household bread. The memorial has already been signed by a number of influential members of the medical profession and scientific societies.

SEVEN AT A BIRTH.

SOME notes on Lagos in a recent issue of *Man*, the journal of the Royal Anthropological Institute of Great Britain and Ireland, by Mr. N. W. Thomas, state that the first born of twins is called *Taiwo* (see the world), the second *Koindi* (come behind), because it is supposed to send the other on in front to see the world. The *Koindi*, it is said, usually dies, and in that case an image of it must be made or the mother will not bear any more children. In the case of triplets, the third one is called *Idowu* (the servant of twins). The next child is called *Alaba*, and is the servant of *Idowu*, and the next is *Idoqbe*, who watches the house while others come, and is very precious. Seven are said to have been born at once in Ibadan in 1907; an eyewitness certified this fact to Mr. Thomas, who comments: "In view of the case of six at a birth on the Gold Coast, attested by an English medical man, there seems no reason to doubt the story."

THE DISTRIBUTION OF MOSQUITOES IN ENGLAND.

THE Mosquito Investigation Committee of the South-Eastern Union of Scientific Societies have issued another circular (No. 5) in connexion with their inquiry into the distribution, habits, and breeding places of *A. plumbeus*. Two reports have been submitted to the Ministry of Health since the issue of circular No. 4 in September, 1920. The researches following this circular established the fact that *A. plumbeus* is found extensively distributed throughout the South-Eastern area of England. In some districts *all* stages have been found; in others only larvæ and imagines. The species hibernates as partly grown larvæ, mainly in beech, birch, chestnut, and holly tree-holes, and imagines have been found in every season of the year except winter. The Minister of Health, in acknowledging the committee's second report for the half year ending June 30th, 1921, desired the inquiry to be continued and a further report to be submitted with special reference to any curtailment of distribution or decrease in numbers of the species that may have been caused by the severe drought of the past summer. A questionnaire designed to elicit further information forms the substance of circular No. 5. Further information on the important work done by this committee may be obtained from the hon. secretary, Rev. T. W. Oswald Hicks, "Lesware," Linden-road, West Green, London, N.

Those who are interested in but have as yet no knowledge of entomology will find a popular introduction to this subject in British Insect Life,[1] by Edward Step, F.L.S., a book written with the object of interesting non-scientific readers in the several types of insect life commonly met with in this country. It is illustrated with reproductions of photographs which give a fairly clear idea of the appearance of the insects; a good coloured frontispiece shows the meadow brown butterfly. It is, of course, impossible in a book of this scope to deal with all the species of known British insects, of which there are some 12,000, but the author has described typical examples with a minimum of technical language. Members of the public who learn to identify some of the disease-causing agents, and are prepared to make observations on their habits and breeding-places, are taking an active and useful part in forwarding the preventive side of medicine.

[1] London: T. Werner Laurie, Ltd. 1921. Pp. 264. 10*s*. 6*d*.

"LA FRANCE."

UNDER this title a review of the French press is appearing weekly, published by Messrs. Evans Brothers, Ltd., at Montague House, Russell-square, London, W.C. The paper consists partly of extracts from the best French newspapers, and partly of short articles designed to interest English readers in an intimate manner with French life and manners. Parents whose children are studying French will be glad to know of a paper which they can obtain each week for their children and which they can place fearlessly in their hands; while the pages will form an excellent and interesting way by which a general public can keep up its knowledge of French.

THE USES OF DOG (CYNOTHERAPY).

To the Editor of THE LANCET.

SIR,—Interesting details with regard to what may be termed cynotherapy have appeared in recent issues of THE LANCET (Oct. 8th, p. 786, and 22nd, p. 884), information being gleaned from France of the eighteenth century and from Mesopotamia of the tenth. It is not, however, necessary to go so far afield either in time or place to find this sort of thing in folk-medicine. Apparently in the 1763 edition of the "Pharmacopée Universelle" there were directions as to ointment, oil, and liniment prepared from dogs, the liniment being made use of for sciatica and rheumatism. In the present year I have heard more than once in Manchester of some stuff called dog oil. One man, crippled by rheumatoid arthritis, has even obtained a supply of this material for local use from one of his friends—I have not seen it, however. In South Yorkshire, too, I hear of its employment in Ecclesfield and in Sheffield.

Inquiries fail to reveal how this dog oil is prepared nowadays; if it is really an oil it can hardly be the natural fat of the dog, as this, like mutton fat, solidifies after death of the animal in temperate climates. A herbalist from whom I asked information, knows nothing of this dog oil, though stocking mandrake and dragon's blood (or should one write it as dragons' blood?) on her shelves, but suggests that as oil of swallows does not come from swallows, this dog oil may perhaps have nothing to do with dogs, but may really be some vegetable product, instancing dog roses, dogwood, and dog violets in support of this notion. Whatever its real nature, it would appear to have a wonderful reputation in the folk-treatment of joint affections of various kinds, and as proof of its efficacy they say that "it's so strong that it will even go through iron!"

With regard to the lick of the dog as a healing agent (which I suspect to have arisen owing to the misunderstanding of a scriptural incident, Lazarus succumbing under the treatment), I heard a couple of years ago in County Durham of a whole family ascribing their recovery from scabies to their sores being licked by a pet dog.

I am, Sir, yours faithfully,

Manchester, Nov. 6th, 1921. W. J. RUTHERFURD.

To the Editor of THE LANCET.

SIR,—Allow me to add to what has been published in THE LANCET of Oct. 8th and 22nd concerning the uses of dogs in medicine, that Hippocrates, speaking of phthisis, says that consumptives must eat *σκυλακίσιον κρέας* or dog's meat.

I am, Sir, yours faithfully.

S. C. ZAVITZIANOS.

CANINE DISTEMPER.

IN regard to an epidemic disease recently fatal in South Wales, there seems no reason to doubt that it was a specially virulent brand of distemper, concerning which we know about as much or as little as we know of measles in the human subject and its ætiology. Although the causative organism of distemper in the dog has not been isolated, evidence is growing that the disease is due to a filtrable virus analogous to that of equine influenza, swine fever, and fowl plague. Associated in some way with the disease, whether as mixed infection or as predisposing factor, are the *Bacillus bronchisepticus* (Ferry) and various strains of staphylococci and streptococci. Subcutaneous injection of the serous discharge from the nose of affected dogs kills young animals in six to seven days. Natural infection occurs through direct or indirect contact with affected animals. Young dogs in the second half-year of life are chiefly affected, but dogs of any age may contract the disease and one attack does not confer complete immunity.

The respiratory system bears the chief brunt of the attack. The mucosa of the air passages is bright red, swollen, and covered with sero-purulent secretion. The lymph glands are enlarged. In most cases there is catarrhal pneumonia. In fatal cases the pleura is often found covered with fibrinous exudation; there may be fluid in the pericardial cavity and fatty degeneration of the heart. Liver and kidneys show fatty or parenchymatous degeneration, and there may be myelitis. Intense catarrh of the conjunctiva may lead on to ulcerative keratitis. The familiar symptoms are lassitude, loss of appetite, shivering, a dry nose, scanty urine, thin watery discharge from nose and eyes, dry husky cough, and sneezing. Discharge from nose and eyes becomes purulent, obstructing the nostrils and gluing the eyelids together. There is rapid emaciation and loss of strength. The initial exanthem may recur in severer form along with diarrhœa and icterus. When broncho-pneumonia sets in there is the characteristic offensive odour from the body.

Treatment consists in catching the disease in its early stages and raising the patient's resistance to invading organisms. To eliminate toxins, evacuants and diuretics are generally given. Intestinal antiseptics, such as hyposulphite of soda in full doses, have been found useful. The efficacy of canine distemper vaccine is in doubt; if used it must be given early. Many veterinary surgeons consider it useless except as a prophylactic. Apart from this, warmth, quiet, and frequent small easily-digested meals are the chief means of preventing chorea and the other troublesome nervous sequelæ. Donovan's solution has some reputation as a tonic in convalescence. Isolation should be strictly enforced, with sterilisation of feeding utensils and precautions against carrying infection on the part of the attendant.

FRAUDULENT "CURES."

A TRIAL held recently in the department of the Seine, as a result of which a chemist and a pharmacist were condemned to a month's imprisonment and a fine of Fr.5000, has aroused interest afresh in the subject of fraudulent remedies. In this case the tribunal considered the advertisement and sale of "toxicurol," a tuberculosis "cure," as illegal practice of medicine, and though the defendants' action was described as bordering on swindling, they could not be punished as swindlers, it seems, because no third party was associated in the enterprise. If one or more medical men had been found associated in this fraud, as was the case in the MacLaughlin belt trial in Paris (June 7th, 1912) that would have constituted a third party and made the case one of fraud. Mr. A. Peytel, writing in the *Paris Médical* for August 20th, suggests that the crime should be made one of fraud even without the intervention of a medical accomplice. This seems a logical conclusion and would provide the law with a powerful weapon for good. Reference of vaunted cures to an expert commission should then be made obligatory whenever a complaint is placed by responsible people—by the medical associations, for example.

Every country suffers from the curse of secret remedies. In the *Scalpel* for Oct. 15th Dr. Van Langendonck has accumulated evidence of some shocking examples from advertisements in the Belgian press. Remedies for "disorders in women," discovered by ecclesiastical worthies in the seventeenth century, are bad enough, but one may share fully the writer's indignation at an advertisement (from *Le Soir*) which runs, "*Le cancer.* Le cancer guéri rapidement et radicalement par le remède célèbre du curé Daury, ..." and at a pharmacist who promises to cure gonorrhœa in a fortnight with a dry remedy or to send the complete treatment of syphilis in return for Fr.10.60. Such advertisements offend against society and should be severely punishable.

PUBLIC HEALTH IN NYASALAND.

ON March 31st, 1920, the estimated European population of this Protectorate, including Government officials, was 729 males and 286 females—a total of 1015, as compared with 724 in the previous year. The Asiatic population increased by 108 to 515 during the year. The native population, which is estimated on the number of huts, was put down at 545,000 males and 658,000 females—total 1,203,000. During the year 170 European officials received medical treatment; 20 were invalided, but there were no deaths. A total of 313 non-official Europeans came under treatment, of whom seven died. The shortage of medical staff rendered it impossible to carry out any special investigations in connexion with communicable diseases, except that investigations were continued in the North Nyasa district in the matter of plague. The only recorded cases occurred in August. As statistics have shown that infection with this disease reaches its height in the rainy season, it is a matter for congratulation that no cases at all occurred from August, 1919, to the end of March, 1920—i.e., throughout a whole wet season. From April to December the preventive measures were continually enforced, and during that period a total of 1,247,068 rats were killed. The year 1919–20 may be regarded (says the writer of the annual report) as confirming the belief that the prosperity which awaited the future progress of this Protectorate at the conclusion of hostilities is likely to be maintained. It is now apparent that the war has had no permanent ill-effect on the prospects of the country; and when once the native character reverts to its normal condition, and the general conditions of trade recover from their present stagnant state, it is confidently to be expected that Nyasaland will take an ever increasingly important place in the Empire.